

**NOTICE INVITING EXPRESSION OF INTEREST****EOI NO. RCIL/SR/ERS/2024-25/EOI/10 DTD. 10-01-2025****Expression of Interest (EOI) For****“Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme”**

Issued by:

**RailTel Corporation of India Ltd***(A Nava-Ratna PSU under Ministry of Railways)**Kerala Territory Southern Region,**1<sup>st</sup> Floor Eastern Entry Tower Ernakulam Junction**Railway Station Ernakulam, 682016*

Disclaimer

RailTel Corporation of India Ltd. (herein after called the RailTel) has prepared this Expression of Interest (EOI) document solely to assist prospective bidders in making their decision of whether bid or not to bid.

While the RailTel has taken due care in the preparation of information contained herein and believes it to be accurate, neither the RailTel or any of its Authorities or Agencies nor any of their respective officers, employees, agents or advisors give any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it. This information is not intended to be exhaustive and interested parties are required to make their own inquiries and do site visits that it may require in order to submit the EOI. The information is provided on the basis that it is non-binding on RailTel, any of its authorities or agencies or any of their respective officers, employees, agents or advisors. The RailTel reserves the right not to proceed with the bidding/EOI process at any stage without assigning any reasons thereof, or to alter the timetable reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the EOI further with any party submitting an EOI. No reimbursement of cost of any type will be paid to persons or entities submitting the EOI

**EOI NOTICE**

RailTel Corporation of India Limited,  
Kerala Territory Office, 1<sup>st</sup> Floor,  
Eastern Entry Tower,  
Ernakulam South Railway Station,  
Ernakulam-682016

**EOI NO. RCIL/SR/ERS/2024-25/EOI/10 DTD. 10-01-2025**

**RailTel Corporation of India Ltd., (here after referred to as “RailTel”) invites EOIs for Selection of Partner Request for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme (here after referred to as KSEB), from RailTel Empanelled Business Associates for exclusive TEAMING ARRANGEMENT for the following “Request for Proposal (RFP) for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme “**

**KEY INFORMATION**

Closing date for Submission of e-Bids	15-01-2025 at 15:00 Hours
Date of opening of E-Bids	15-01-2025 at 15:30 Hours
EMD at the time of submission of bid	Rs. 5,00,000/-
Bid Validity Period	210 days
e-Eoi portal for Submission of Bids	<a href="https://railtel.eNivida.com">https://railtel.eNivida.com</a>
Cost of Eoi Document	Nil
Place of Opening of Eoi	Online RailTel Corporation of India Limited, Kerala Territory Office, 1 <sup>st</sup> Floor, Eastern Entry Tower, Ernakulam South Railway Station, Ernakulam-682016

**Note:**

RailTel reserves the right to change the above dates at its discretion. Bids received after due date and time will be summarily rejected.

Eoi Notice and link for Eoi Document are available on RailTel’s website and e-Eoi portal <https://railtel.eNivida.com> for download. For online bid submission the bidder will have to necessarily download an official online copy of the Eoi documents from e-Nivida Portal. All future Information viz. corrigendum/addendum/ amendments etc. for this Eoi shall be posted on the RailTel’s website and e-Eoi Portal only. Printed copy of Eoi document will not be sold from RailTel office. Bid will be submitted online on e-Nivida Portal only.

Sd/- (JGM/TERRITORY MANAGER)

**Earnest Money Deposit (EMD)**

- 1) **EMD payable:** To be submitted by the selected BA shall be submitted in the form of Bank Guarantee/Online Bank Transfer/Fixed Deposit as Total EMD, including the EMD submitted.
- 2) EMD Rs **5,00,000/-** is to be submitted at the time of submission of EOI in the form of RTGS/Bank Guarantee/Fixed Deposit.
- 3) **Validity of the EMD:** The EMD shall be valid till the finalization of end customer RFP/Tender i.e. award of order and till submission of Performance Guarantee of requisite value with due regards to the validity of the offer.

**Bids without EMD will be summarily rejected.**

The EMD should be in the favour of RailTel Corporation of India Limited payable at Secunderabad through online bank transfer. The Partner needs to share the online payment transfer details like UTR No. date and Bank along with the proposal.

RailTel Bank Details for Submission of EMD / PBG :

Union Bank of India, **Account no. 327301010373007**, IFSC Code: **UBIN0805050**.

Demand Draft shall be submitted in favor of RailTel Corporation of India Limited payable at Secunderabad.

EMD will be forfeited in case of non-submission of remaining EMD and PBG in time. EMD of unsuccessful Bidders will be refunded by RailTel on finalizing the EOI.

Eligible Business Associates are required to direct all communications related to this Invitation for EOI document, through the following Nominated Point of Contact persons:

**Contact Details for this EOI:**

Level: 1 Contact: Shri. Suvin Varghese, DM/Marketing/Ernakulam

Email: [suvinvarghese@railtelindia.com](mailto:suvinvarghese@railtelindia.com) Contact: +91-8075285582

Level: 2 Contact: Shri. Anish Rehman, AGM/Marketing/Ernakulam

Email: [arehman@railtelindia.com](mailto:arehman@railtelindia.com) Contact: +91-9704659404

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**Note to Bidders:**

1. The response to EOI is invited from **Eligible Empanelled Partners of RailTel only.**
2. All the document must be submitted with proper indexing and page nos.
3. This is an exclusive pre-RFP partnership arrangement with empanelled business associate of RailTel for participating in the end customer RFP. Selected partner's authorized signatory has to give an undertaking that they will not submit directly or indirectly their bids and techno- commercial solution/association with any other Organization once selected through this EOI for pre- bid teaming arrangement (before and after submission of bid to prospective customer Organization by RailTel). **This undertaking has to be given with this EOI Response.**
4. Transfer and Sub-letting: The Business Associate has no right to give, bargain, sell, assign or sublet or otherwise dispose-off the Contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the present Contract or any part thereof.
5. Bidder has to agree to comply with all OEM technical & financial documentation including MAF, Technical certificates/others as per end-to-end requirement mentioned in the end customer's RFP as applicable and further issued corrigendum's as mentioned below:

**Detail regarding END CUSTOMER Tender for reference:**

<b>End customer Tender Ref. No.</b>	<b>RFP No. CEIT/ITCSD/10/2024-25</b>
<b>Tender ID</b>	<b>2024_KSEB_692967_1</b>
<b>Date of floating by End customer</b>	<b>27.09.2024</b>
<b>Closing time &amp; date</b>	<b>21-01-2025 dtd 18.00 hrs</b>
<b>Floated on portal</b>	<b>etender Kerala Portal</b> <b>(<a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>)</b>

6. Bidder also shall undertake to submit MAF of major items of the proposed solution and other documents required in the end Customer Organization's tender in favour of RailTel against the proposed products. The selected BA has to provide MAF from the OEM in the name of RailTel for bidding in the concerned tender of KSEB, if their proposed solution is quoted to the customer as applicable and required.
7. The selected bidder will have to accept all Terms & Conditions of KSEB RFP on back-to- back basis, wherever applicable.
8. Any corrigendum(s) issued by KSEB against pertinent tender/RFP shall be the part and scope of this EOI document on back-to-back basis and the BA's shall be on the lookout of corrigendum's issued from time to time by RCIL & KSEB, in the interest of their own Bid.
9. No exemption/relaxation is applicable to MSME/Start-ups.

10. Only, the eligibility clause/criteria and marks scoring criteria for SI/BA (Prospective BA/SI) as mentioned in KSEB's RFP is not applicable on the Bidder/BA applying against this EOI. Rest all Terms & Conditions of RFP floated for pertinent tender will be complied by SI/BA/Bidders.
11. However, OEM considered by SI/BA for this project have to mandatorily comply all the eligibility & technical criteria/compliance on back-to-back basis in line with end customer RFP and corrigendum(s) issued thereof.
- 12. Please refer KSEB RFP Payment terms as this will remain applicable on back-to-back basis on Successful bidders. Payment shall be made only after actual receipt of payment from KSEB on submission of required documents.**
13. Bidder may check the price/commercial bid as per BOQ and match the same with FORMATS FOR SUBMISSION OF THE COMMERCIAL BID of KSEB RFP and if found any discrepancy, may be brought to the notice of RCIL immediately and may modify their financial bid format as per KSEB RFP financial bid document.
14. This is a customer centric bid on back-to-back basis and therefore the benefits of MSME shall not be applicable on this Eoi & Work Order.



## **1. About RailTel (Please visit *railtelindia.com* for more insight)**

RailTel Corporation of India Ltd (RailTel) is one of the largest neutral telecom infrastructure providers in the country owning a Pan-India Optic fibre network on exclusive Right of Way (ROW) along Railway track. The OFC network presently reaches to over 4500 towns & cities of the country including several rural areas. With its Pan India high-capacity network, RailTel is working towards creating a knowledge society at various fronts. The portfolio of services provided by RailTel includes Data Centre & DR services, Tele-presence as a service, NLD services, IP-1 services, Internet and Broadband services on a pan-India basis.

Equipped with an ISO 9001, 20000-1:2011 & 27000 certification, RailTel offers a wide gamut of managed telecom services to Indian Telecom market including Managed lease lines, Tower co location, MPLS based IP-VPN, Internet, Data Centre services, NGN based voice carriage services to Telecom Operators, Dark fibre leasing to MSOs/LCOs. The major customer segment for RailTel comprises of Enterprises, Banks, Government Institutions/Department, Educational Institutions/Universities, Telecom Service Providers, Internet Service Providers, MSOs, etc. RailTel being a “Nav Ratna (Category-I)” PSU is steaming ahead in the enterprise segment with the launch of various services coupled with capacity augmentation in its Core network.

The main Project of RailTel/ERS Territory on hand are KFON, KSWAN, Wi-Fi service at Kerala Govt. Secretariat, E health Mission, IOCL, VSS Project etc.

## **2. Background of EOI**

RailTel Corporation of India Ltd (hereafter referred to as ‘RailTel’) an ICT arm of Indian Railways has been in the forefront of building innovative platforms and solutions and vision to build range of Information and Communication Technology (ICT) Services for its customers.

In this context, RailTel intends to participate in response to the RFP floated by KSEB as above (hereafter referred to as ‘KSEB’) and accordingly seeks to select a suitable partner for pre-bid arrangement through this EOI for the work of “Request for Proposal (RFP) for the Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme”

Bidder has to agree to comply with all OEM technical & financial documentation including MAF, Technical certificates/others as per end-to-end requirement mentioned in the end customer's RFP. Bidder also shall undertake to submit MAF of major items of the proposed solution and other documents required in the end Customer Organization tender in favour of RailTel against the proposed products. The selected BA has to provide MAF from the OEM in the name of RailTel for bidding in the concerned tender of KSEB, if their proposed solution is quoted to the customer, wherever applicable.

The details of tender are as below:

**Tender Title: Request for Proposal (RFP) for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme**

**Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024; latest amendment/ Corrigendum / clarifications. Floated on etender Kerala Portal (<https://etenders.kerala.gov.in/>)**

### **Method of Quoting**

System Integrator (SI)/BA shall quote for single OEM/ make and model for each item description, subject to the confirmation of the given specification equivalence. The make and model shall be clearly mentioned in the proposal. However the subsistence/subcomponents offered shall be compatible with inter-operability to the main system, if different makes/models offered. Deviation to be this will not be accepted/shall be summarily rejected, Wherever applicable.

### **3. Scope of Work & Partner Selection**

The scope of work will be as mentioned in the pertinent end Customer organization RFP/Tender for "Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme" on the website (<https://etenders.kerala.gov.in/>) with all latest amendment/Corrigendum/ clarifications. All materials that propose to use with the work shall be approved by the Employer / Engineer-in-charge. The scope of work is subject to addition / deletion by the Employer.

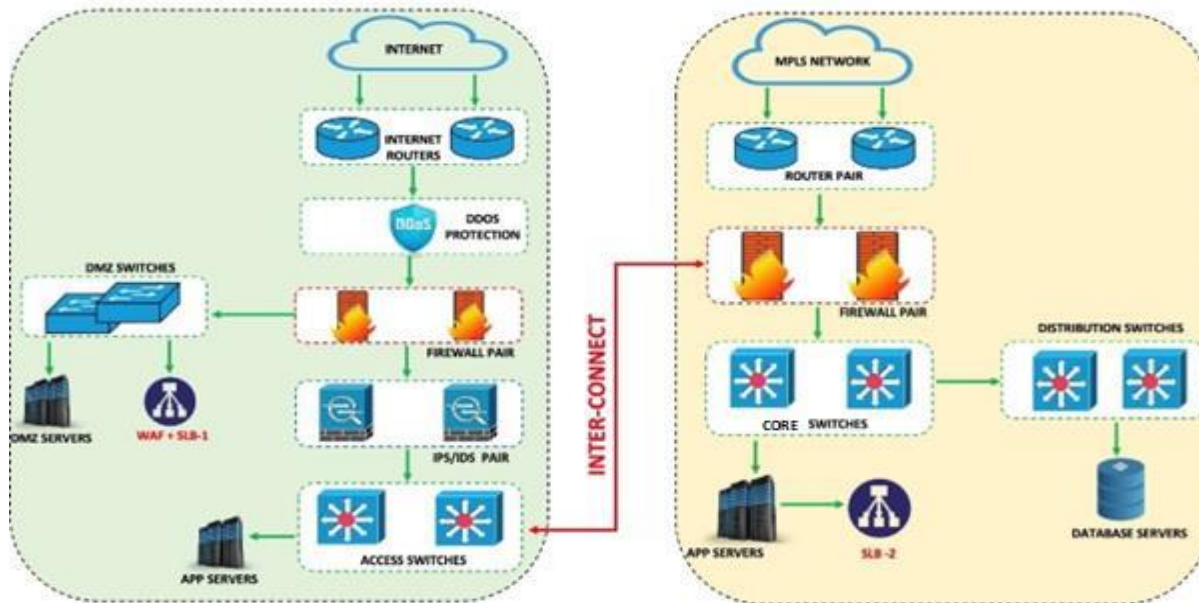
The purpose of the RFP is for setting up a secure and dedicated IT infrastructure at KSEB Data Centre and DR Centre complying with tier-III standards by carrying out the revamping of the existing compute, network and storage hardware. The services shall be offered with predefined SLA and warranty support for five years. Ensuring business continuity and compliance for Information Security shall be the responsibility of the bidder.

In order to achieve this goal, KSEBL is looking for a long-term engagement with a suitable partner (bidder) for the implementation and establishment of IT Infrastructure over its internal network of DC and DR with Server, Storage, backup systems, software define Network/virtualization etc. for the organization.

### **The scope of work includes**

#### **EXISTING ARCHITECTURE AT DATACENTRE**

The following schematic describes the equipment housed in the Data Centre (DC), including routers, switches, firewalls, servers, SAN (Storage Area Network) storage, backup solutions, and other devices critical to the IT infrastructure. It provides a clear overview of the hardware components supporting the Data Centre's operations and their respective roles in the system.



The DR Centre located at Infopark, Cherthala is also having a similar architecture of IT infrastructure in terms of Servers, network equipment, security devices, Storage etc. The existing infrastructure at DC as well as DR is nearing obsolescence, especially the Servers, network equipments, Storage etc., pointing to the need for a revamping. Presently, a portion of the workloads are running on virtual machines (VMs) and containerized environments, and the remaining are running on stand alone Servers. As part of the revamping/upgrade process, the entire workload will be migrated to VM/Containerized clusters so as to ensure reliability, scalability and enhanced performance.

This modernization will be essential for improving the efficiency of the Data Centre, as it supports critical systems and applications running on 24x7 basis.

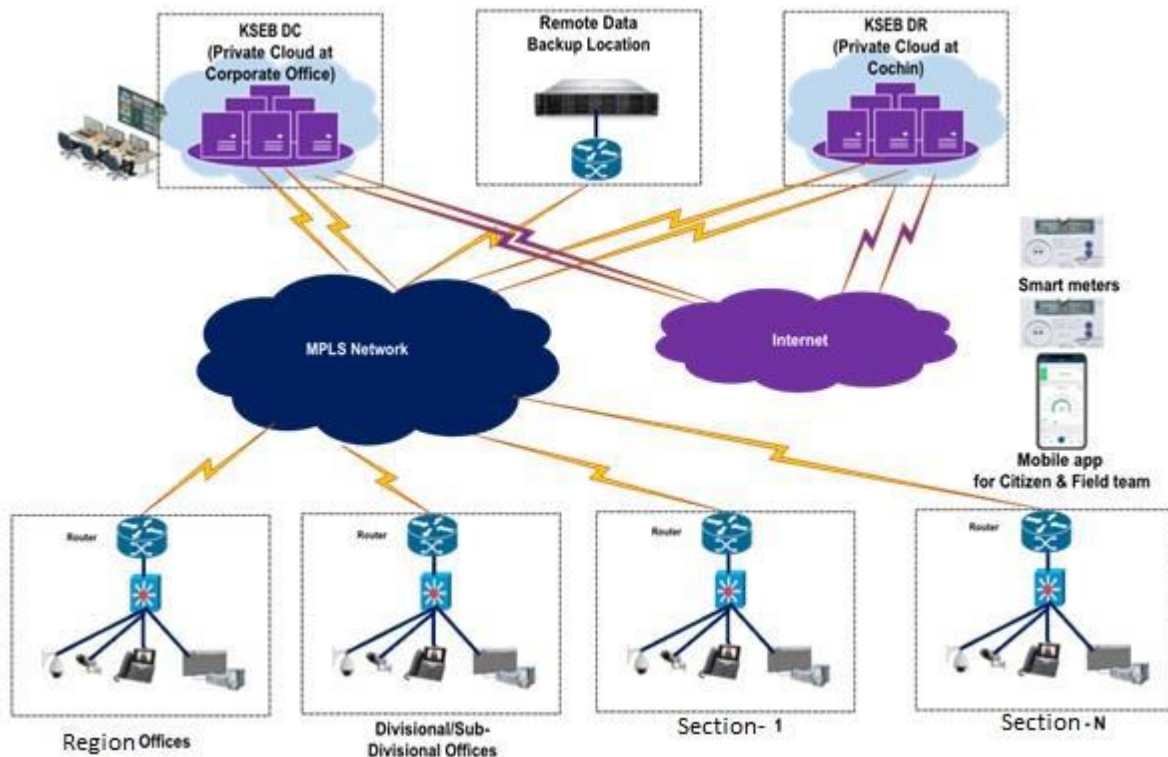
## PROPOSED SOLUTION

### PROPOSED OVERALL ARCHITECTURE

As mentioned in the project requirement, KSEBL need to revamp the existing infrastructure to host the current applications and also needs to augment to support the upcoming Applications of AMI, Data Analytics etc.

The following Business Function Requirements are to be met by the Data Centre and DR Centre Upgrade and Expansion

- Enhanced Performance and Capacity:** Increasing the Data Centre's capacity and performance to handle growing volumes of data and increasing demand for digital services. This might involve upgrading hardware and revamping network infrastructure.
- Improved Reliability and Redundancy:** Strengthening the data centre's resilience against potential disruptions, such as power outages, natural disasters, hardware failure or cyberattacks. This could involve investing in disaster recovery, redundant networking equipment, and geographically dispersed data storage.
- Enhanced Security:** Implementing advanced cybersecurity measures to protect sensitive data from unauthorized access, data breaches, and other security threats. This might include implementing advanced encryption protocols, enhancing access controls and utilising advanced network protocols.



4) Scalability: Designing the Data Centre infrastructure to be easily scalable to accommodate future growth and technological advancements. This could involve adopting modular architectures, virtualization technologies, and cloud integration strategies.

5) Cost Efficiency: Optimizing operational costs by improving energy efficiency, reducing maintenance overhead, and maximizing resource utilization. This might involve adopting green technologies, automating routine tasks and consolidating infrastructure resources to minimize wasted capacity.

6) Supporting Innovation and Digital Transformation: Providing a robust foundation for innovation and digital transformation initiatives. This could involve facilitating the adoption of emerging technologies such as artificial intelligence, Internet of Things (IoT), and big data analytics.

7) Compliance and Regulatory Requirements: Ensuring compliance with relevant data protection laws, cyber security guidelines, industry regulations, and international standards. This might involve implementing data governance frameworks, conducting regular audits, and maintaining comprehensive documentation of data handling practices.

8) Disaster Recovery and Business Continuity: Developing and implementing robust disaster recovery and business continuity plans to minimize downtime and data loss in the event of a catastrophic failure or unforeseen incident. This might involve implementing off-site backups, redundant data replication, and failover mechanisms to ensure rapid recovery and uninterrupted service delivery.

9) Supporting Economic Growth and Competitiveness: Contributing to the country's economic growth and global competitiveness by providing a reliable and high-performance digital infrastructure that attracts investment, fosters innovation, and enables businesses to thrive in the digital economy.

PROPOSED SOLUTION COMPONENTS AT DATA CENTRE AND DR CENTRE

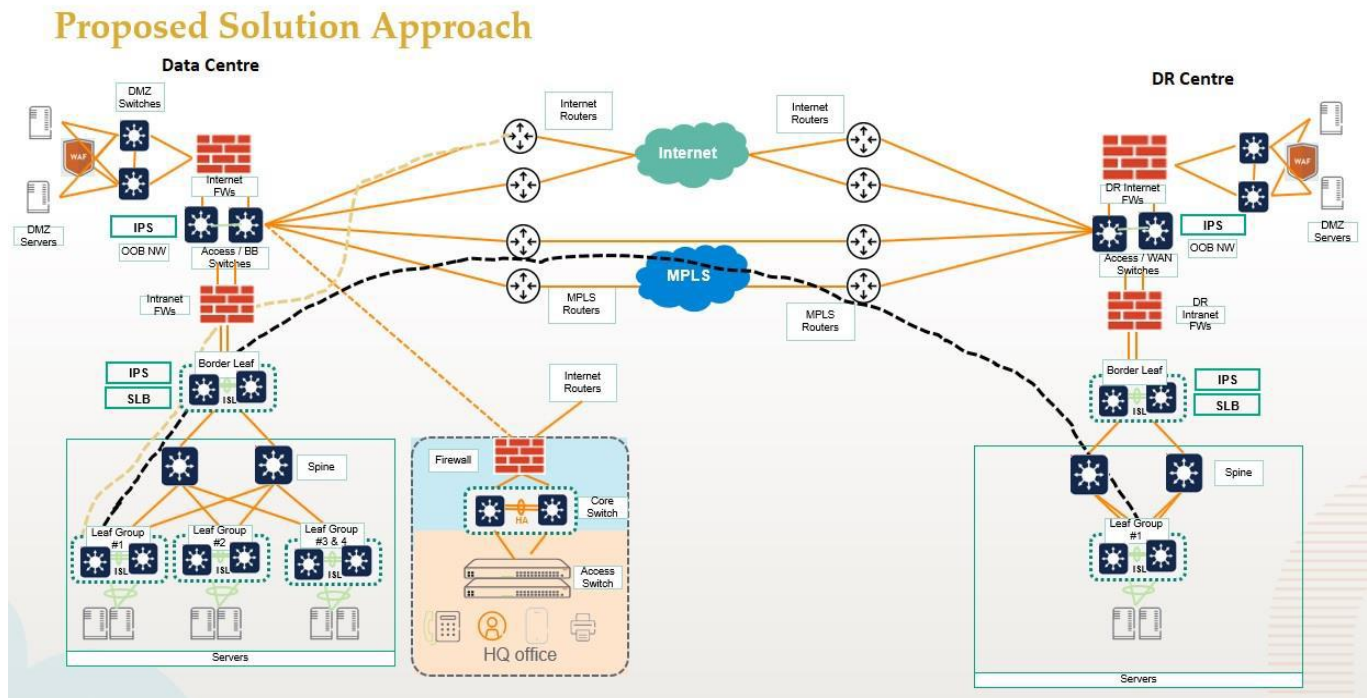
The Data Centre revamping and expansion must be carried out and configured to implement the following architecture:

1) Software Architecture: Software Defined Data Centre

2) Hardware Architecture: Highly reliable and high-performance infrastructure with end-to-end redundancy and no single point of failure

The vendor should carry out the Supply, Installation and Commissioning of the hardware, software and applications for delivering the services. All Hardware solution components should have 99.99% uptime. All the proposed solutions should have both IPv4 and IPv6 functionalities for any type of rollout.

### KSEB Proposed Architecture at Data Centre and DR Centre



The DC and DR revamping process is divided into the following:

#### Part-I

- Revamping and Expanding Compute Clusters at DC and DR
- Digital Infrastructure Cluster (For AMI project)
- Critical Workload Cluster
- Production Workload Cluster
- Management & Test environment Cluster

#### Part-II

- Network Infrastructure revamping at DC and DR

#### Part-III

- Storage and Backup solution revamping at DC and DR

#### **Part-IV**

- Enterprise management system (EMS/NMS) for DC/DR
- Mail messaging solution for DC/DR

### **Part-I Revamping and expanding Compute Clusters**

#### **1) Digital Infrastructure Cluster (For AMI project)**

This cluster will be hosting all new digital transformation initiatives including Automated Metering Infrastructure (AMI) Workload. The cluster should have complete SDDC functionalities to onboard applications on the fly.

The following outlines the requirements for a cloud infrastructure solution, focusing on several key features for managing both **virtual machines (VMs)** and **containers**

- Multitenant Architecture

The system should support multiple tenants (Applications and stakeholders) on the same infrastructure while keeping data and operations isolated for security.

- Self-Service Architecture, Quota Mgmt/Metering Services and Approval Mechanisms

This enables users to provision resources on their own within predefined limits and quotas. It includes built-in metering to track usage and approval processes for resource allocation.

- Should be able to host and manage both VM and Containers

The platform must be able to host and manage both virtual machines and containerized applications, providing flexibility in handling different workloads.

- Should have in-built security features such as Micro-segmentation

Micro-segmentation allows for granular security policies within the infrastructure, isolating workloads and controlling traffic between them for enhanced security.

- Should have Authentication and RBAC features

Ensures only authorized personnel can access and manage different parts of the infrastructure, using role-based access control

- Dynamic workload management and intelligent operations

The system should optimize resource allocation dynamically, distributing workloads efficiently across the infrastructure.

- Integrated with Network Management, Security Policies

The solution should integrate seamlessly with the proposed network management and enforce security policies across all network layers.

- Unified Management of entire cluster components

A single platform should manage all infrastructure components, including computing, memory, storage, and network resources, for easier monitoring and administration.



The tentative hardware requirements for this cluster

Sl No	Configurations	DC	DR
1	Server with 2 x 32 Core 2.5 GHz, 512GB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	6	4

## 2) Critical Workload Cluster

This cluster will be hosting all critical workloads such as Consumer Billing, Online payment, ERP, CRM systems etc. The proposed Cluster solution should support both VM and container workloads.

The following outlines the requirements for a cloud infrastructure solution, focusing on several key features for managing both **virtual machines (VMs)** and **containers**

- **Multitenant Architecture**  
The system should support multiple tenants (Applications and stakeholders) on the same infrastructure while keeping data and operations isolated for security.
- **Should be able to host and manage both VM and Containers**  
The platform must be able to host and manage both virtual machines and containerized applications, providing flexibility in handling different workloads.
- **Should have in-built security features such as Micro-segmentation**  
Micro-segmentation allows for granular security policies within the infrastructure, isolating workloads and controlling traffic between them for enhanced security.
- **Should have Authentication and RBAC features**  
Ensures only authorized personnel can access and manage different parts of the infrastructure, using role-based access control
- **Unified Management of entire cluster components**  
A single platform should manage all infrastructure components, including computing, memory, storage, and network resources, for easier monitoring and administration.

The tentative hardware requirements for this cluster will be

Sl No	Configurations	DC	DR
1	Server with 2 x 48 Core 2.4 GHz, 1TB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	4	3

## 3) Production Workload Cluster

This cluster will be hosting all other production workloads such as LDAP, EMS/NMS, Backup, Mailing solutions, DNS, DHCP services etc. The scope of work of the bidder for this cluster will be limited to the supply, installation, and integration of the compute infrastructure as per the specifications.

The tentative hardware requirements for this cluster will be

Sl No	Configurations	DC	DR
1	Server with 2 x 32 Core 2.5 GHz, 512GB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	3	0

#### 4) Test Environment Cluster

This cluster will be hosting all test Servers of software Applications hosted in the Data Centre and Applications which are under development. The scope of work of the bidder for this cluster will be limited to the supply, installation and integration of the compute infrastructure as per the specifications.

The tentative hardware requirements for this cluster will be

Sl No	Configurations	DC	DR
1	Server with 2 x 32 Core 2.5 GHz, 512GB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	3	0

#### Part-II Network Infrastructure revamping

The proposed solution should be an SDN-managed DC/DR network with spine-leaf architecture consisting of 100G links between spine and leaf switches, and 25G Ports across leaf switches. The spine-leaf network shall be integrated with all types of workloads and enable enhanced level of security for database and Application Servers using protocols like VxLAN, VRF etc. with multi-tenant architecture. Should have unified network and associated security policies management.

It is responsibility of the bidder to carry out seamless integration/migration of the existing DC network consisting of the following infrastructure components running in active-active mode:

- Core routers (MPLS/Internet)
- Radware Distributed Denial of Service Appliance
- Radware IDS/IPS
- Checkpoint NextGen Firewall
- Radware Web Application Firewall
- Radware Server Load Balancer
- Citrix Single Sign-On System
- OpenLDAP Directory Services

The existing HQ computer network with 10G fibre backbone shall also be integrated to the revamped Data Centre network.

The tentative hardware requirements for the Network infrastructure revamping is as follows:

Sl.No	Network equipment	DC	DR
1	Spine switch with 32 Port 100G loaded with 16 SR Optics modules on each spine	2	0
2	Spine switch with 12/24 Port 100G loaded with 8 SR Optics modules on each spine	0	2



3	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 24 nos 10G-3 nos on Each leaf	8	0
3	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 12 nos and 10G-12 on Each leaf	0	2
4	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 12x25G, 10x10G, 6x1G modules on Each leaf	2	0
5	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 6x25G, 5x10G, 6x1G modules on each Leaf	0	2
6	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2	2
7	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2	2
8	NOC LAN Switches 48 Port 1G Copper Port Switch loaded with 2 x 10G Optics on Each Switch	2	0
9	NOC LAN Switches 24 Port 1G Copper Port Switch loaded with 2 x 10G Optics	0	1
10	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	2	1
11	DCN Fabric Manager	1	1
12	OEM fiber Patch Cords- 25Mtrs	20	10
13	OEM fiber Patch Cords- 15Mtrs	10	6
14	OEM fiber Patch Cords- 5Mtrs	20	10
15	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	LS	LS

### Part-III Storage and Backup Solutions Revamping/Upgradation

The proposed solution should have the following components

- Storage Solutions designed to handle storage capacity for all AMI and critical workload clusters.
- Backup Solutions designed to handle both VM and container workloads
- SAN Switches to connect storage and compute clusters

High-performing and scalable SAN storage designed to handle a minimum of 5.5 Lakhs IOPS for DC (4Lakhs IOPS for DR) from day 1 with <1ms latency to enable high meter data and billing transactions during the peak period

DC backup solution should have the capability to take backup of VM and containers to store it in multiple targets and different locations with different schedules. The proposed solution should store the third copy in remote locations connected through MPLS network or leased lines.

The tentative hardware requirements for the Storage and Backup solutions

Sl.No	Configurations	DC	DR	Remote location
1	400TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 5.5 Lakhs IOPS	1	0	0
2	200TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 4 Lakhs IOPS	0	1	0
3	48 Port 32Gbps SAN Switches with 48 nos. of 32Gbps SFPs	2	0	0
4	48 Port 32Gbps SAN Switches with 24 nos. of 32Gbps SFPs	0	2	0
5	Backup Software – with 60 VM & 4 Container worker node licenses	1	0	0
6	Backup Software – with 5 VM license	0	1	0
7	Tape library with 2xLTO-9 tape drives	1	0	0
8	Tape drive- LTO-9, 18TB drive	0	1	0
9	Backup Appliance- NL SAS with 100TB storage	1	0	1

#### **Part-IV Enterprise Management Systems/NMS and Mail messaging System**

##### **1). EMS/NMS at DC/DR**

Proposed Enterprise Management Systems should monitor the IT infrastructure in Data Centre, DR Centre and MPLS WAN connecting around 1200 locations.

Should have the following functionalities

- Architecture- The EMS/NMS Application shall be running in active-passive mode in the Data Centre & DR Centre. In case there is a failure of the Application at DC, the instance at DR shall be operational
- Network Monitoring – 3000 Devices Uptime and Link Monitoring  
This involves real-time uptime and link monitoring of around 3000 network devices to ensure consistent network performance, availability, and proactive issue identification.
- Server Monitoring – Involves monitoring of around 40 nos. of Servers to observe CPU utilisation, Memory, Storage, RPS etc.
- Application service monitoring – 50 Applications service monitoring across multiple clusters  
Monitoring the health and performance of 50 application services distributed across multiple clusters to detect issues, ensure optimal performance, and maintain availability.
- Database Monitoring – 10+ Database monitoring across multiple cluster

The system should support monitoring of over 10 databases spread across various clusters to track performance, ensure data integrity, and detect potential issues early.

- f) Configuration Management – 3000 Devices  
Managing configurations of around 3000 devices, ensuring consistent settings, compliance, and the ability to quickly apply updates or rollbacks if necessary.
- g) Asset Management – 10000 Devices  
Keeping track of assets, including network devices, servers, and infrastructure components, for a total of 10000 devices. This includes lifecycle management, inventory tracking, and auditing.
- h) Helpdesk, Incident and Ticketing Management  
Helpdesk Functionality: Supporting field-related queries and enabling the submission of issues by users.  
Ticketing System with SLA: Ticketing system that includes service-level agreements (SLAs), escalation management, and tools for assigning and tracking tickets, ensuring that both data center (DC) and field engineers can effectively resolve issues.
- i) AIOps Management  
Utilizing AI-driven operations (AIOps) to automate IT operations, providing real-time analytics, anomaly detection, and predictive insights to optimize performance, prevent downtime, and streamline complex tasks.

### **Mail Messaging Solution at DC/DR**

Proposed mailing solutions should handle a minimum of 5000 accounts from day 1 and should be integrated with LDAP services.

The following are the minimum functionalities of mailing solution:

- a) Architecture- The Mail Messaging System shall be running in active-passive mode in the Data Centre & DR Centre. In case there is a failure of the Application at DC, the instance at DR shall be operational
- b) Email and Calendar Integration: Provides secure email with a comprehensive web interface and built-in calendar integration, supporting personal and shared calendars, appointments, and tasks.
- c) Contact Management: Offers contact lists, personal address books, and shared contacts, making it easy for users to manage personal and company-wide directories.
- d) Task Management: Allows users to create, track, and manage tasks with due dates, priorities, and reminders, improving productivity and organization.
- e) Document Sharing and Briefcase: Provides a central location to store and share documents with team members, allowing easy access and collaboration.
- f) Unified Communication: Integration with third-party unified communication systems, enabling chat, voice, and video features, depending on the environment.
- g) Mobile Sync: Supports synchronization with mobile devices, including access to emails, contacts, and calendars on iOS, Android, and Windows devices.
- h) Web-Based Admin Console: Simplified management of users, domains, and services through a web-based interface that makes administrative tasks easier to handle.
- i) Advanced Security Features: Includes anti-spam, anti-virus, and secure messaging features to protect against email-borne threats. Encryption and two-factor authentication (2FA) should be available for enhanced security.
- j) Email Archiving and Discovery: Offers email archiving, retention policies, and discovery tools, helping organizations meet regulatory requirements for data retention.
- k) Collaboration Tools: Shared calendars, email groups, and collaboration across teams
- l) Storage Quota and Management: Administrators can set email storage quotas, manage user accounts, and enforce data policies easily from the admin console.

- m) Migration: The bidder shall carry out the migration of all mailboxes/mail IDs in the existing Mailing system (Novell Groupwise GW) to the new Mail Messaging System

## **SURVEY AND ASSESSMENT**

### **CONDUCT A COMPREHENSIVE SURVEY OF THE EXISTING DC AND DR COMPONENTS AND ROLLOUT**

- Hardware Evaluation:
  - Review of servers, storage systems, network devices, and power systems to ensure optimal performance
- Software & Applications:
  - Assessment of operating systems, applications, and virtualization platforms for efficiency, compatibility, and security.
- Network Architecture:
  - Analysis of network topology, bandwidth usage, latency, and redundancy for optimized connectivity and fault tolerance.
- Security Infrastructure:
  - Comprehensive review of firewalls, access controls, encryption mechanisms, and vulnerability management to ensure robust security measures are in place.
- Disaster Recovery & Business Continuity:
  - Analyse current backup strategies, disaster recovery plans, and failover systems to ensure resilience and minimal downtime in case of disruptions
- Assess the suitability and availability of KSEB infrastructure for the integration of existing DC with the proposed DC, DR IT Infrastructure
- Assess short-listed potential areas for service rollout.

### **DC & DR IT INFRA DESIGN AND PLANNING**

- Develop a detailed design, integration and migration plan
  - Infrastructure Architecture:
    - Design the overall architecture including servers, storage, network systems, and virtualization platforms to ensure optimal performance, scalability, and redundancy including rack design
  - Network Design:
    - Develop a robust network topology that supports high bandwidth, low latency, and redundancy, with clear paths for internal and external connectivity, load balancing, and failover mechanisms.
    - Integrate with existing KSEB MPLS WAN and HQ LAN
  - Compute & Storage:
    - Design scalable compute and storage systems that support business applications, data processing needs, and future expansion with a focus on resource utilisation, redundancy and disaster recovery.
  - Integration & migration:
    - Develop and submit a comprehensive plan to integrate the revamped network &

compute infrastructure to the existing network so as to enable parallel operation for a specific period and then facilitate for the migration of the software Applications to new infrastructure in a phased manner with very minimal downtime for the critical services.

- Security Framework:
  - Integrate with existing security solutions like DDoS, IDS/IPS, NGFW, WAF etc. and overall Organisation security policies
- Disaster Recovery & Business Continuity:
  - Design a comprehensive disaster recovery plan with offsite backups, failover systems, and high availability to minimize downtime and ensure quick recovery in case of disruptions.
- Cloud & Virtualization:
  - Implement cloud solutions and virtualization technologies to provide flexibility, cost efficiency, and scalability for workloads that require dynamic resources for both digital infrastructure workload and critical workload
- Compliance & Governance:
  - Ensure the design meets regulatory and industry standards (e.g., ISO, GDPR) for data security, privacy, and operational procedures.

## IT INFRASTRUCTURE INSTALLATION, CONFIGURATION AND INTEGRATION

- Supply, Install, Implement, and Test Critical Solutions including private cloud, servers, storage, network, software-defined DC
  - Hardware Installation:
    - Install servers, storage systems, networking equipment, and other physical components based on the approved infrastructure design.
  - Network Configuration:
    - Set up and configure the network topology, including switches, routers, firewalls, and load balancers, ensuring connectivity, redundancy, and optimized traffic management.
  - Server and Storage Configuration:
    - Install and configure servers, storage arrays, and virtualization platforms, ensuring proper resource allocation and redundancy for applications and data.
  - Virtualization and Cloud:
    - Implement cloud solutions and virtualization technologies to provide flexibility, cost efficiency, and scalability for workloads that require dynamic resources for both digital infrastructure workload and critical workload
  - Backup and Disaster Recovery Setup:
    - Implement backup systems, disaster recovery mechanisms, and high-availability configurations to ensure data integrity and minimize downtime in case of system failure.

## INTEGRATION & MIGRATION

- The revamped network, compute and storage infrastructure shall be integrated with the existing network & security infrastructure in the Data Centre/DR Centre
- Implement seamless communication with existing DC Infrastructure to proposed DC Infra solutions for application migrations

- Migration of software Applications to the revamped IT infrastructure is not included under the scope of the bidder. However, the successful bidder has to provide required assistance/support to KSEB IT teams for the successful migration of Software Applications to the new VMs/Containers in a phased manner so as to ensure very minimum downtime for the critical services running on 24x7 basis in the Data Centre
- Integrate with existing MPLS WAN, HQ LAN and security infrastructure

### QUALITY ASSURANCE AND TESTING

- Infrastructure Performance Testing:
  - Server & Storage Performance: Test the performance of servers, storage arrays, and virtualization platforms under different load conditions to ensure efficient resource allocation and scalability.
  - Network Performance: Conduct network tests across all network segments (LAN, WAN, VPN) to verify optimal data flow and identify potential bottlenecks.
- Private Cloud Testing:
  - Virtualization & Workload Distribution: Test virtual machine performance, resource distribution, and workload balancing within the private cloud to ensure efficient use of compute and storage resources.
  - Cloud Security: Conduct security testing specific to cloud services, including encryption, access management, and data isolation between virtual machines or tenants.
  - Compliance Testing: Ensure that the private cloud meets relevant regulatory standards (e.g., ISO, NIST, GDPR) for data security and privacy.
- Disaster Recovery & High Availability Testing:
  - Failover Testing: Test the data center's redundancy and failover mechanisms to ensure high availability during outages or component failures.
  - Backup & Restore Testing: Validate that backup systems and disaster recovery processes are functioning correctly by simulating data loss and testing recovery times and accuracy.
  - Private Cloud Failover: Test the ability of the private cloud environment to fail over to backup infrastructure seamlessly, without service interruption.
- Monitoring & Alerting Systems:
  - Monitoring Tools: Validate that monitoring tools are correctly configured to track key performance metrics, resource usage, and security incidents.
  - Alerting Mechanisms: Test alerting systems to ensure timely notifications in case of performance issues, security breaches, or hardware failures.

### TRAINING AND TECHNOLOGY TRANSFER

- Conduct training sessions to familiarize KSEB teams with the Private cloud, virtualization, Servers, storage, spine-leaf network, backup solutions, EMS/NMS etc. at both user level and administrator level as per the detailed training schedule.

### POST IMPLEMENTATION SUPPORT, MAINTENANCE AND UPGRADES

- KSEBL will employ the required teams to monitor DC, DR and MPLS infrastructure
- The bidder shall provide one dedicated network resource (L2/L3) at the Data Centre from 9am to 5pm on all working days, for a period of one year from the date of go-live of the revamped IT infrastructure. The above resource will be responsible to attend, coordinate and rectify the issues related to the supplied

IT infrastructure. The onsite resource shall have professional certification in networking with at least 3 years of experience in setting up and maintaining Data Centre network infrastructure.

- Bidder should provide all backend OEM contract details to the KSEB. Necessary contracts shall be executed by the bidder with the OEMs of Servers, network, Storage etc. in order to provide required support to rectify the issues as per SLA timelines.
- Bidder should provide onsite Technical support on 24x7 basis for any hardware issues, software issues, solution issues raised by KSEB during the contract period as per SLA timelines.
- Applicable, stable software updates/upgrades should be done by the bidder based on the approval from the Utility, as soon as the OEM releases such updates/upgrades.

#### COMPLIANCE AND REGULATORY REQUIREMENTS

- Ensure the design and implementation meets regulatory and industry standards (e.g., ISO, ISMS, GDPR etc.) for information/cyber security, privacy, and operational procedures.

#### DOCUMENTATION AND REPORTING

- Maintain detailed documentation of the DC infrastructure, configurations, and system specifications.
- Prepare regular progress reports, including project milestones, implementation status, and key performance indicators.
- Provide comprehensive documentation and handover materials to facilitate future operations and maintenance.
- In addition, provide documentation standards for DC Architecture diagrams, configurations, and operating procedures; reporting requirements, including progress reports, milestone updates, and key performance indicators; and system documentation.

#### PROJECT MANAGEMENT

- Assign a dedicated Project Manager responsible for overseeing and coordinating all project activities.
- Develop a project schedule with clear milestones, timelines, and deliverables. Conduct regular project meetings and maintain open communication channels with all stakeholders.

#### INDICATIVE BILL OF MATERIALS

##### INDICATIVE BILL OF MATERIAL AT DC AND DR

The following is an indicative bill of materials required to carry out the revamping works as per the RFP specifications at DC, DR and Remote location from Day 1

Sl.No	Item	Qty
<b>Data Centre</b>		
<b>A. Compute</b>		
1	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	6
2	Server with 2 x 48 Core 2.3 GHz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVMe	4

3	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME	3
4	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME	3
5	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1)	1
6	Cloud Infra Solutions for Critical workload (For Servers under S/N.2)	1
<b>B. Network infrastructure</b>		
7	Spine switch with 32 Port 100G loaded with 16 SR Optics modules on each spine	2
8	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 24 nos 10G-3 nos on Each leaf	8
9	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 12x25G, 10x10G, 6x1G modules on Each leaf	2
10	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
11	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
12	NOC LAN Switches 48 Port 1G Copper Port Switch loaded with 2 x 10G Optics on Each Switch	2
13	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	2
14	DCN Fabric Manager as per specifications with required license	1
15	OEM fiber Patch Cords- 25Mtrs	20
16	OEM fiber Patch Cords- 15Mtrs	10
17	OEM fiber Patch Cords- 5Mtrs	20
18	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	Ls
<b>C. Storage &amp; Backup Systems</b>		
19	400TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 5.5 Lakhs IOPS	1
20	48 Port 32Gbps SAN Switches with 48 nos. of 32Gbps SFPs	2
21	Backup Solution- 60 VM & 4 Container worker node licenses	1
22	Tape library with 2xLTO-9 tape drives	1



23	Backup Appliance NL SAS-100TB	1
24	OEM fiber Patch Cords 10/15Mtrs for Servers to SAN Switch connectivity (Should consider based on Server QTY)	Ls
<b>D. EMS/NMS &amp; Mail Messaging System</b>		
25	EMS/NMS Software as per specifications (running in active-Passive mode at DC/DR)	1
26	Mail Messaging System as per specifications (running in active-Passive mode at DC/DR)	1
<b>E. Miscellaneous</b>		
27	42U OEM Racks for Servers/network equipments	4
28	Man power deployment charges (One resource during office hours at Data Centre for a period of one year)	1
29	Desktops type-I for NOC Room	10
30	Desktops type-II for NOC Room	5
31	Laptops for System/Network Administrators	2
32	Miscellaneous Item-1	1
33	Miscellaneous Item-2	1
34	Miscellaneous Item-3	1
<b>DR Centre</b>		
<b>A. Compute</b>		
35	Server with 2 x 32 Core 2.5 Ghz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	4
36	Server with 2 x 48 Core 2.3 Ghz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	3
37	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1)	1
<b>B. Network infrastructure</b>		
38	Spine switch with 12/24 Port 100G loaded with 8 SR Optics modules on each spine	2
39	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 12 nos and 10G-12 on Each leaf	2
40	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 6x25G, 5x10G, 6x1G modules on each Leaf	2

41	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
42	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
43	NOC LAN Switches 24 Port 1G Copper Port Switch loaded with 2 x 10G Optics	1
44	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	1
45	DCN Fabric Manager as per specifications with required license	1
46	OEM fiber Patch Cords- 25Mtrs	10
47	OEM fiber Patch Cords- 15Mtrs	6
48	OEM fiber Patch Cords- 5Mtrs	10
49	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	Ls
<b>C. Storage &amp; Backup</b>		
50	200TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G , Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 4 Lakhs IOPS	1
51	48 Port 32Gbps SAN Switches with 24 nos. of 32Gbps SFPs	2
52	Backup Solution – 5VM License	1
53	Tape drive- LTO-9, 18TB drive	1
54	Miscellaneous Item-1	1
55	Miscellaneous Item-2	1
56	Miscellaneous Item-3	1
<b>Remote Location</b>		
57	Backup Appliance NL SAS – 100TB	1
<b>Installation and Commissioning</b>		
58	Supply, installation, configuration, integration, testing, commissioning and go-live of all hardware and software components	1

**Note:**

The BoQ items mentioned above are indicative only. The bidder is liable to provide additional items/services required, if any, for providing all required features/functionalities/services mentioned in the Scope of Work

Cyber Security Compliance: All products (hardware/software) quoted by the bidder shall comply with the statutory guidelines of Government of India related to Cyber Security, industry standards etc.

**INDICATIVE BILL OF MATERIAL DURING NEXT TWO YEARS (UPGRADE BASED ON DEMAND)**

The following is an indicative bill of materials will be required to implement and upgrade the existing solutions during first two years of the Contract Period of 5 years for which PO will be raised based on the Utility's demand. The below list will be considered for price discovery and price bid evaluation purposes.

Sl.No	Specifications	Qty
DC		
1	64GB RAM for Servers	5
2	Storage Upgrade (50TB unit)	5
3	100G SR optics	5
4	32G SR optics	10
5	25G SR optics	10
6	10G SR Optics	25
7	Backup Solution license – 10VM	1
8	EMS/NMS- Network device license (500 nos.)	2
9	Mail Messaging System – User account/mail box license- (500 nos.)	2

**PROJECT SCHEDULE****Revamping of IT infrastructure in the Data Centre & DR Centre**

SL No.	Activity	Timeline
1	Date of LOA/WO	T0
2	Submission of reports on site survey, detailed design, man power deployment plan, migration plan, project schedule etc.	T0 + 1 Weeks
3	Supply of IT infrastructure components at Data Centre and DR Centre	T0 + 6 weeks
4	Installation, Configuration & system integration of all Active and Passive components at Data Centre and DR Centre	T0 + 12 weeks
5	Migration of WAN links, Internet links, SSO, Security components, Services, LDAP etc. to the newly setup IT infrastructure at Data Centre and DR Centre	T0 + 20 weeks
6	Acceptance Testing and Go-live of the revamped Data Centre and DR Centre	T0 + 24 weeks = T
7	Onsite warranty and support as per SLA	T + 5 years

### **3.1 Warranty & AMC**

The warranty would be valid for the performance of products, service and application as applicable in the **KSEB RFP on Back to Back basis for 60 months**

- The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- Subject to GCC Clause, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- The onsite warranty/support shall remain valid for the period of five years from date of commissioning.
- The Purchaser shall give Notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- Upon receipt of such Notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- If having been notified, the Supplier fails to remedy the defect within the period of warranty specified in the SCC; the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

#### **ADDITIONAL WARRANTY**

The agency shall be liable to provide additional two years warranty for all the equipment supplied under this RFP, if KSEB desires so at that point of time. The rate for the additional two years onsite warranty should be quoted as per BoQ, and the same shall be considered for price bid evaluation.

#### **GUARANTEE AND REPLACEMENT OF DEFECTIVE/DAMAGED MATERIAL**

##### **GUARANTEE**

The equipment's supplied should be guaranteed for their performance for the entire contract period. The equipment found defective within the above guarantee period shall be repaired/replaced by the supplier free of cost within one month of receipt of intimation.

##### **REPLACEMENT OF DEFECTIVE/DAMAGED MATERIALS**

If the whole or part of the materials are found to be defective/damaged or are not in conformity with the specification or sample, such defects or damages in the materials supplied shall be rectified within 15 days from the time of intimation of defect/damage either at the point of destination or at the supplier's works, at the cost of supplier, against proper security and acknowledgement. In the alternative, the defective or damaged materials shall be replaced free of cost within 15 days from the date of receipt of the intimation from the purchaser of such defects

### **3.2 Warrant Support**

This shall be applicable as per RFP/Tender terms and conditions of End customer, unless otherwise specified.

### **3.3 Quality of Service, Service Level Agreement and penalty**

**PURPOSE OF THIS AGREEMENT**

The purpose of this SLA is to clearly define the levels of service to be provided by bidder to Purchaser for the duration of this contract or until this SLA has been amended. The benefits of this SLA are to:

- Trigger a process that applies Purchaser and Bidder management attention to some aspect of performance only when that aspect drops below an agreed upon threshold, or target.
- Makes explicit the performance related expectations on performance required by the Purchaser
- Assist the Purchaser to control levels and performance of services provided by Bidder
- This SLA is between Bidder and Purchaser.

**DESCRIPTION OF SERVICES PROVIDED**

Bidder shall provide services as defined in Section V - Scope of Work, in accordance with the definitions and conditions mentioned in the 'Terms and Conditions' of the RFP.

**DURATION OF SLA**

This Service level agreement would be valid for entire period of contract (5 years).

**SERVICE LEVEL AGREEMENTS & TARGETS**

This section is agreed to by Purchaser and Bidder as the key bidder performance indicator for this engagement. The following section reflects the measurements to be used to track and report systems performance on a regular basis. The targets shown in the following tables are for the period of contact or its revision whichever is later

**Service Level Chart**

Mapping with Section of SoW	Service	Parameter	Service Level	Validation	Penalty
5.1	Project Management	Submission of Monthly Project Status reports & Conducting Status meetings	100%	Minutes of Meetings  Approval of Status reports by Engineer-in-Charge	0.001% of total project cost for every default
5.2	Helpdesk	Resolution of tickets logged as per the Severity definition chart	99%	Reports generated from Ticket logging system	95% - 99% calls resolved in specified time: 0.1% penalty on the total contract amount  90% - 95% calls resolved in specified time: 0.2% penalty on the total contract amount
5.3	Install, Moves, Add, Changes (IMAC) Services	Should be part of Monthly project status report	95%	Report	0.001% of total project cost

5.4	Asset/ Inventory Management	Provide monthly MIS Asset Inventory	95%	Report	0.001% of total project cost
		Conduct Annual Physical Asset verification	100%	Approval of Physical Asset Verificati on report	0.001% of total project cost
5.5	Supplier Management Services	Evaluation of Supplier Performance on quarterly basis	100%	Approval of Supplier Performa nce evaluatio n report	0.001% of total contract amount
		Tracking of Supplier SLA & tickets logged with suppliers	95%	Status of tickets logged with Suppliers	0.001% of total contract amount
5.8	LAN & Workstation administration	Resolution of ticket logged	99%	Reports generated from Ticket logging system	Covered under 5.2
5.9	Network Monitoring & Management	Resolution of tickets logged related to Networks	99%	Reports generated from Ticket logging system	Covered under 5.2
		Data Centre Network Availability  Minimum of 99.9% uptime measured on a monthly basis	99.9%	Report	0.1% of total contract amount for less than 99.8%  0.2% of total contract amount for less than 98.0%

5.11	Server Administration/ Management	Rollout of patches and upgrades (OS, hypervisor or infra level) on Servers after patch being approved on test environment	98%	Patch update report	0.02% of total contract amount
		Uptime of VMs/ Containers on monthly basis (without service interruption)	99.8%	Report	0.02% of total contract value for less than 99.8%  0.03% of total contract value for less than 98%  0.05% of total contract value for less than 95%
		Uptime of each physical Servers except	94%	Report	0.03% of total contract amount for less than 94%  0.04% of total contract amount for less than 91%  0.05% of total contract amount for less than 88%
5.14	Mail/ Messaging System	Up time of email Servers/services	99%	Report	0.02% of total contract amount for less than 99%  0.03% of total contract amount for less than 98%  0.05% of total contract amount for less than 95%
		Provide monthly MIS of user account and mailboxes created/deleted.	95%	Report	0.001% of total contract value
5.15	Uptime of EMS/NMS	Daily MIS of server and device health checkup (CPU, disk space, memory utilization, I/O utilization, DB/Application uptime etc.)	100%	Reports generated from EMS/NMS system	0.01% of total contract value

6.1	Incident management	Resolution of tickets logged in Incident Management tool	99%	Reports generated from Ticket logging system	0.01% of total contract amount
6.3	Problem Management	Supplier shall analyze all the incidents and provide a root cause report every month if there are more than 10 incidents of the same type. Supplier shall take the needed corrective action to prevent further issues due to the same cause.	100% timely submission covering all incidents logged in that month	Root cause report  Incident report stating problems faced by the users  Document detailing corrective action	0.02% penalty on the total contract amount, if the Supplier does not submit a problem report for that month.  0.05% penalty on the total contract value, if the Supplier does not perform the corrective action for more than One calendar month.
6.4	Change Management	Resolution of Change Management tickets logged in Change Management tool	99%	Reports generated from Change Management System	Covered under 5.2
6.7	Availability Management	Should be part of Monthly status report	95%	Report	0.001% of total contract amount
6.8	Performance Management	Should be part of Monthly status report	95%	Report	0.001% of total contract amount



6.9	Capacity management	Should be part of monthly status report	95%	Report	0.001% of total contract amount
6.10	Security Management	Should be part of Monthly status report	95%	Report	0.001% of total contract amount

**Note:**

1. The bidder is liable to provide post implementation support services as mentioned in the detailed descriptions in the Scope of Work in accordance with the concerned SLA Clauses listed above.
2. In case of Breach of SLA Clauses, penalty will be deducted from the Performance Bank Guarantee submitted by the bidder.
3. The total deduction of penalty per month shall not exceed 0.2% of the total contract amount
4. The Agreement Authority shall have the right to make suitable amendments in the above SLA conditions based on the requirements from time to time, on mutually agreed terms and conditions

**SERVICE AVAILABILITY & CRITICALITY CHART**

SERVICE	DURATION	CRITICALITY
SERVICE DESK	24 HOURS	URGENT – 12X6 REST - HIGH
ASSET MANAGEMENT SERVICES	8X6	MEDIUM
VENDOR MANAGEMENT SERVICES	8X6	MEDIUM
SERVER/VM MANAGEMENT SERVICES	24x7	CRITICAL
DATA CENTRE ADMINISTRATION	24X7	CRITICAL
NETWORK MANAGEMENT – DC/DR	24X7	CRITICAL
NETWORK MANAGEMENT - LAN	12X7	CRITICAL
STORAGE MANAGEMENT	12x7	MEDIUM
MESSAGING/EMAIL MANAGEMENT	12X6	MEDIUM
BACKUP MANAGEMENT	12x6	MEDIUM
MANAGEMENT OF EMS/NMS	24X7	CRITICAL

**Severity Definition Chart**

S/N	Support Category	Criteria	Resolution	Maximum Response Time
1	Critical	The system is unable to be used for normal business activities. There is certainty of financial loss to PURCHASER.	90 Minutes	15 Minutes

2	Urgent	There is a problem with part of the system, which impacts on Purchaser's decision making. No viable workaround is available. There is a likelihood of financial loss.	4 Hours	1 Hour
3	High	The efficiency of users is being impacted, but has a viable workaround.	6 hours	2 Hours
4	Medium	A low impact problem that affects the efficiency of users but has a simple workaround.	12 Hours	8 Hours
5	Low	A fault, which has no particular impact on processing of normal business activities.	One Week	8 Hours

### 3.4 Purpose of EOI

Detailed as above

3.5 Solution provider/BA need to implement and manage the Entire system and oversee the overall functioning of the organization's network infrastructure, including planning, design, implementation, and maintenance with failure free environment and without any downtime in operations of KSEB. **SLA shall be applied as per KSEB's tender document and corrigendum released, if any on back-to-back basis**

3.6 Bidder may submit their response in the prescribed form of duly signed and stamped for techno commercial bid through Online mode vide email sent to <https://railtel.eNivida.com> , within the stipulated date and time, as mentioned in this EOI document. The Bidder shall accompany necessary documents as prescribed in the Eoi.

### 3.7. Partners may note that this is a single stage, single Packet Bid Interested

3.8. Only those bids shall be opened, which have been submitted within the stipulated time as mentioned in this EOI document with required credentials and EMD.

### 3.9. Technical Bid contains following:-

#### I. Eligibility Criteria

S.N	Type	Description	Document Required
1	Existence / Origin	<ul style="list-style-type: none"> <li>The company must be registered in India.</li> <li>The bidder should have been in the IT related services for the last 5 years.</li> </ul>	<ul style="list-style-type: none"> <li>Incorporation/registration Certificate along with Memorandum &amp; Articles of Association</li> <li>Certificate consequent to change of name, if applicable</li> </ul>
2	General	The company must have: I. Valid PAN card. II. Been registered with GST.	I. Copy of PAN Card. II. Copy of GST registration certificate.
3	General	The company should not be blacklisted by any Government institution/ Government PSU	Self-declaration, in case this is discovered to be otherwise, the bidder will be declared ineligible at any stage of the tender.

4	Turnover	The bidder must have Minimum Average Annual turnover of 27 crore for any three financial years during the last five years ending 31st March 2024.	Audited Balance Sheet & CA Certificate .
5	Net Worth	The bidder must have positive net worth in each of the last 3 FY's ending 31st March 2024.	Audited Balance Sheet & CA Certificate
6	General	Bidder should be an ISO 9001: 2015 and ISO 27001:2015 or later certified company.	Copy of certification from an authorized certification body
7	Empanelment	Bidder must be empanelled with RailTel as Business associate.	Copy of Empanelment letter or application details for BA with RailTel.
8	General	The bidder should have at least 50 technical qualified professionals on bidders payroll	Self declaration by HR dept/Authorised personnel to be submitted mentioning employee name, designation and certifications.
9	General	All products offered by the bidder should be available with the concerned OEMs as on date and should be publicly referenceable.	Self-declaration by the OEM
10	General	The OEMs of Server, Storage, Networking Components should have local Technical Assistance Centre (TAC) support in India and Should have sales office and Support/Returned Materials Authorization (RMA) depot in Kerala/South India.	Details of Technical Assistance Centre, Sales office and Support/RMA depot
11	General	The OEMs of Server, Storage, Network and Backup products should have ISO 9001, ISO 14001, ISO 27001 and CMMI level3 or above certifications	Copy of valid Certification documents
12	General	The OEMs of Server, Storage and Networking Components quoted by the bidder should have presence in the country for the past 10 years.	1. Self-declaration by the OEM 2. Proof for previously supplied orders of the OEM
13	General	OEM of Storage should have deployed at least 3 Enterprise class Storage solutions in Government / Banking / PSU / Corporate Organisations during the last three years in India.	Copy of Work Orders and its satisfactory project completion report
14	General	The Bidder/OEM from a Country which shares a land border with India will be eligible only if they are registered with the competent authority as per Govt. of India Order, issued by the Ministry of Finance vide No.F.No.6/18/2019-PPD dated 23/07/2020	Copy of the document of registration with DPIIT, Govt. of India.

15	General	The bidder should submit a valid letter from the OEMs in the specified format for all active components and associated software in the BoQ confirming the following: ▪ Authorization for the bidder ▪ Confirm that the products quoted are not end-of-life products within the next 7 years ▪ Undertake that the support, including spares, patches, etc., for the quoted products shall be available for the next 7 years	OEM support letter to be submitted in the specified format
16	Experience	The bidder shall also have experience in setting up network in a reputed Data Centre/ Control room	Proof of Work Order / client certificate for successful completion to be submitted
17	Experience	<p>The bidder should have experience in successfully completing IT infrastructure projects for setting up/system integration of Data Centre IT infrastructure which includes Servers with Virtualization, Networking, Storage etc. during the last five years in Central/State Government/PSUs/Nationalised Banks/Reputed Organisations with order value as follows:</p> <ol style="list-style-type: none"> <li>1. Three similar projects not less than Rs. 12 Crore each; or</li> <li>2. Two similar projects not less than Rs. 18 Crore each; or</li> <li>3. One similar project not less than Rs. 30 Crore.</li> </ol> <p>OR</p> <p>The bidder should have experience in providing Facility Management Services for the IT infrastructure in a Data Centre of Central/State Government/PSUs/Nationalised Banks/Reputed Organisations for a continuous period of 3 years during the last seven years. The contract shall have order value of minimum Rs. 36 Crores.</p> <p>(OR)</p> <p>The bidder should have experience in supply, installation, operations and maintenance of IT/ITES OR IT Security infrastructure pertaining to Data Center (DC) OR Security Operation Center (SOC) OR Network Operation Center (NOC) OR NMS/Control Room equipment in last 10 years with order value as follows:</p> <ol style="list-style-type: none"> <li>1. Three similar projects not less than Rs. 6 Crore each; or</li> <li>2. Two similar projects not less than Rs. 9 Crore each; or</li> <li>3. One similar project not less than Rs. 15 Crore.</li> </ol>	Work orders/Term Sheet/Statement of Work & certificate for successful Completion confirming year and area of activity to be submitted

**Note:**

- If any of the Bids is found to be incomplete, it will be liable for rejection.
- Bidder is to fill the above annexure and indicate the page numbers of the supporting document in the Proof while submitting response to the eligibility criteria.
- Relevant portions, in the documents submitted in pursuance of eligibility criterion mentioned above, shall be highlighted.
- Bidders must ensure that all required documents have been uploaded/submitted along with the bid to justify his/her eligibility.
- Bidder should be an authorized partner/seller of all the proposed solutions/products and should provide Manufacturer Authorization in the template provided in the RFP.

**Price quote in the attached format (Annexure 8).**

- Compliance of OEM/Vendors with their MAF's and all mandatory documents asked by KSEB from OEM/Vendors.
- Unconditional Acceptance of contents the Tender document of KSEB and any Other/General Document of KSEB Tender RFP along with corrigendum and addendum.
- Acceptance Letter of EoI
- Annexure Formats as mentioned in this EOI.
- All documents mentioned in checklist and annexures of this EOI
- The BA agrees to undertake Warranty, Maintenance contract for a minimum **period as per KSEB**. Undertaking in this regard is to be submitted along with the technical bid.
- Contract Period Undertaking – As per pertinent tender floated by KSEB Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme 6 months in addition to 60 months (warranty period) from the date of take over and subjected to the fulfilment of SLA conditions referred above. The warranty period may further be extendable for further two years as per the rate quoted.
- The bid should be duly signed and submitted by Authorized Signatory. The bidder has to submit notarized of non-judicial stamp paper of appropriate value Power of Attorney having authorized signatory's nomination along with board resolution in favour of power of attorney.
- The bidder has to mandatorily submit notarized Annexure-11 on non-judicial stamp paper of requisite value of Rs. 200, else bid shall be summarily rejected.

**3.10.** Prospective bidder's bid evaluation will be done based on above mentioned documents. Bids of those Bidders who submit Technical Documents without OEM/Vendor Name, Make and Model, technical Compliance, and unconditional acceptance of the KSEB hard Copies, will be summarily rejected.

**3.11.** further complying technical requirement with supporting documents of OEM/Vendor MAF, datasheets, BOQ/BOM (wherever applicable) may be treated as technically qualified partner for Stage-1.

**3.12.** Bidders selected as per Para 3.11 above will be treated as eligible for financial bid opening.

**3.13 Financial Bid:**

The Annexure 8 of for financial quote to be submitted for evaluation

**3.14 Selection of Bidder:** as per outcome of Clause 3.9 above

The bidder will be selected on the **lowest quote (L-1)** basis for complete 'Scope of Work' as mentioned in the EOI document and Physical documents of technical specifications of KSEB, subject to the respective overall bid is in compliance to the requirements of this EOI. The partner selected will be termed as 'Commercially Suitable Partner (hereafter referred to as 'CSP')'. It is ascertained, that the final selection of CSP will be on the L-1 basis only. Further, RailTel reserves the right to have negotiation with the CSP if required. However, RailTel reserves the right to select any Bidder irrespective of the ranking in the Bid list without assigning any reasons.

**3.15** The partner selected through this EOI shall be deemed to be responsible for delivering of complete 'Scope of Work' as mentioned in the KSEB's tender document and subsequent corrigendum. However, RailTel at its discern, may take- up a certain portion / percentage of 'Scope of Work' by communicating to the CSP at any point of time during the engagement period. (The day at which 'CSP' is declared, will mark the start of engagement period. The period will be valid till final outcome of this tender as announced by KSEB. In case, RailTel comes out to be winner of the KSEB tender, then the engagement period will get auto-extended to the period RailTel serves KSEB for the concerned tender, unless terminated earlier by RailTel as per terms and conditions mentioned in this EOI document). In this scenario, commercial engagement with the CSP will be for that portion / percentage only, which has not been taken by RailTel. Accordingly, resultant value of work will be derived on the basis of negotiated (in case) commercial bid of the CSP.

**3.16 RailTel** on the basis of inputs / factors available to it from various resources, past experiences of its ICT projects and on the basis of negotiated (in case) commercial bid of the CSP, will endeavour to place best techno-commercial bid in response to the pertinent KSEB's tender. Further relationship with CSP will be based on the outcome pertinent KSEB's tender.

#### **4 General Requirements and Eligibility Criteria for Bidders**

- 4.1. The interested bidder should be an Empaneled Partner with RailTel on the last date of bid submission of EOI & has to provide relevant documents to qualify as per relevant Clause of this EOI.
- 4.2. The interested bidder should submit Earnest Money Deposit (EMD) if applicable, in the format as mentioned in this EOI document along with the bid.
- 4.3. The interested bidder should be in compliance to insertion of Rule 144(xi) in the GFR, 2017 vide office OM no. 6/18/2019-PPD dated 23-July-2020 issued by Ministry of Finance, Government of India, including revisions.
- 4.4. The interested bidder should submit an undertaking for maintaining of 'Local Content Compliance' and shall submit a certificate mentioning the 'Local Content Percentage' duly signed and stamped by statutory auditor or cost auditor or authorized signatory of the interested partner. This will not be a binding clause in cases where end customer has not asked Local Content Clause/Make in India Clause in their Current RFP.
- 4.5 The bidder has to mandatorily provide all Annexures of this EOI and corrigendum(s) thereof.**
- 4.6. The interested bidder should not be backlisted by any State / Central Government Ministry / Department / Corporation / Autonomous Body on the last date of submission of EOI.
- 4.7. There should not be any ongoing or past, arbitration case(s) between 'RailTel or Organizations under Indian Railways' and 'Interested Bidder' on the last date of submission of EOI.
- 4.8. The interested bidder shall not have a conflict of interest with one or more bidding parties. Participation of interested bidder(s) with a conflict-of-interest situation will result in the disqualification of all bids in which it is involved. A bidder may be in a conflict of interest with one or more parties if including but not limited to:
  - a. Have controlling shareholders as his/her family members viz. spouse, son, daughter, father, mother or brother etc. in common or;

b. Have a relationship with each other directly or through common third parties that puts them in a position to have access to information about or influence on the bid of another interested partner.

4.9. The interested bidder should not be seeking/extending/exploring similar arrangements /engagements with any other organization except RailTel, for the KSEB tender.

4.10. The interested partner should have a valid Goods and Service Tax Identification Number (GSTIN), as on the last date of submission of EOI.

4.11. In addition to above clauses, bid of interested bidder should be in compliance to terms and conditions and technical requirements of the pertinent KSEB tender as referred above.

**Note:** The interested bidder should submit duly signed and stamped EOI cover letter as per the format mentioned at Annexure-02 of this EOI document, as unconditional submission of meeting the clauses mentioned above, from **Clause 4.1. to Clause 4.11**

## **5. Resources to be Deployed**

i. The bidder shall carry out all necessary activities during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

ii. Adequate training, required to carry out the activities mentioned in the scope of work above, shall be provided by Bidder to all deployed resources.

iii. Boarding, lodging, transportation, and all other expenses of the deployed resources are to be borne by bidder,

iv. The Authority shall be at liberty to object to and require the bidder to remove from the works any person who in his opinion misconducts himself or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Authority to be undesirable. Such person shall not be employed again at works site without the written permission of the Authority and the persons so removed shall be replaced within a week's time by competent substitutes.

v. The Authority has agreement with the bidder only, it is the responsibility of the bidder to ensure all due diligence is carried out for background verification of resources deployed. And in any case, the Authority will not be responsible for the violation of due diligence or offence committed by the bidder or any of its resources.

## **6 Proposal Preparation and Submission Cost**

6.1. The interested partner is responsible for all costs incurred in connection with participation in this EOI process, including, but not limited to, cost incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of proposal, in providing any additional information required by RailTel to facilitate the evaluation process or all such activities related to the bid process. RailTel will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process. This EOI document does not commit to award a contract or to engage in negotiations.

## **7 Amendment to EOI Document**

7.1. At any time prior to the deadline for submission of bids, RailTel, may, for any reason can modify the EOI document by an amendment. All the amendments made in the document would be informed by displaying on RailTel's ([www.railtelindia.com](http://www.railtelindia.com)) website only. The interested bidders are advised to visit the RailTel website on regular basis for checking necessary updates. RailTel also reserves the rights to amend the dates mentioned in this EOI for bid process. RailTel may, at its discretion, extend the last date for receipt of EOI response. Individual advices in this connection is not treated as mandatory.

## **8 Bid, PBG and SD Validity Period**

- 8.1. Bid of Interested partners shall remain valid for the period of 210 days from the date of opening the price bid.
- 8.2. RailTel may request for an extension of the period of validity. The validity of the 'EMD', should also be suitably extended if called upon to do so by RailTel. The request and the responses thereto shall be made in writing through e-mail communication only. Further, whenever the bid validity extension is submitted by the interested partner, it should be ensured by interested partner that their PBG (Performance bank Guarantee) and Security Deposit (SD) related to the empanelment should have minimum validity of 210 days from the last date of extended completion period.

## **9 Right to Terminate the Process**

- 9.1. RailTel may terminate the EOI process at any time without assigning any reason. RailTel makes no commitments, express or implied, that this process will result in a business transaction with anyone. This EOI does not constitute an offer by RailTel. The interested bidder's participation in this process may result in RailTel selecting the CSP to engage in further discussions and negotiations toward execution of a contract. The commencement of such negotiations does not, however, signify a commitment by RailTel to execute a contract or to continue negotiations. RailTel may terminate negotiations at any time without assigning any reason.

## **10 Language of Bid**

- 10.1. The bid prepared by the interested partner and all correspondence and documents relating to the bids exchanged by the bidder and RailTel, shall be written in English Language, provided that any printed literature furnished by the Bidder in another language shall be accompanied by an English translation in which case, for purposes of interpretation of the bid, the English translation shall govern. If any supporting documents submitted are in any language other than English, translation of the same in English language is to be duly attested by the Authorised Signatory of the interested partner.

## **11 Submission of Bid**

- 11.1. The Bidder should take into account any Corrigendum to this EOI document that may have been published before submitting their EOI response. The bid is to be submitted in the mode as mentioned in this EOI document. EOI response submitted in any other mode will not be entertained.
- 11.2. Bidders in their own interest are advised to submit the EOI response well in time before the last date and hence to avoid any inconvenience at the last moment.
- 11.3. An Organization / Bidder can submit only 'One EOI Response'. Submission of multiple EOI Response by bidder(s) may lead to rejection of all of its bid.

## **12 Rights to Accept / Reject any or all EOI Response**

- 12.1. RailTel reserves the right to accept or reject any EOI Response, and to annul the bidding process and reject all Bids at any time prior to award of the Contract, without thereby incurring any liability to the affected interested bidder(s), or any obligation to inform the affected Bidders of the ground for RailTel's action.

## **13 Payment Terms**

Back-to-back basis as per KSEB RFP No. CEIT/ITCSD/10/2024-25 dated 27.09.2024 and as per Payment terms below:

### **13.1 Terms of Payment:**

- Payment shall be regulated as detailed below:



Activity	Payment Schedule	Milestones
Supply of IT infrastructure components at Data Centre and DR Centre	40% of the total project cost	Supply of items by Vendor and then purchaser confirmation that material is received as per the Work Order conditions
Installation, system integration and testing of IT infrastructure components	30% of the total project cost	On purchaser approval that system integration has been completed for supplied IT infrastructure components
Migration and go-live of the new IT infrastructure	30% of the total project cost	On purchaser approval for go-live of the new IT infrastructure components including hardware, software etc. in the Data Centre and DR Centre

### 13.2 Annual Maintenance Charges as per RFP if applicable.

13.3. Documents list required ( as applicable) at the time of payment/invoice submission by selected bidder shall be: -

- Valid Tax Invoice (in Triplicate, where supply is Involved)
- Delivery Challan and e way bill
- Factory Test Report
- QA& COQ inspection certificate duly signed by OEM.
- Inspection Certificate or Approval of waiver for the same as applicable.
- Packaging List
- Purchaser's Inspection certificate
- Consignee receipt
- Warranty certificate of OEM
- Insurance certificate
- A certificate duly signed by the firm certifying that equipment/ materials being delivered are new and conform to technical specification.
- A certificate duly signed by the firm certifying that the equipment/ materials being delivered are complete in all respect for the concerned items for which the payment is being released.

All payments shall be released after sign-off by the KSEB.

### 14. Performance Bank Guarantee

Bidder has to furnish bank guarantee as performance security for the supplied equipments and services

A Performance Bank Guarantee equivalent to 10% (Ten Percent) of the respective Contract value shall be furnished by the Successful Bidder within 14 days of receipt of LOA from KSEBL. An unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of GCC. The said bank guarantee shall be initially valid up to ninety (90) days after expiry of the

contract Period and shall be extended from time to time till ninety (90) days beyond the successful completion of the warranty period of 5 years.

- 14.1. RailTel shall also be entitled to make recoveries from the CSP's bills, PBG or from any other amount due to him, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.
- 14.2. If the service period / contract value undergo variation PBG also shall be varied accordingly
- 14.3. During the contract period, RailTel may issue Purchase Order(s) for the additional services ordered by KSEB (in case) to RailTel. In such scenario(s) also, Clause No. 13.1. to Clause No. 13.2. are to be followed by the CSP.
- 14.4. In case the KSEB has sought PBG of the contract in the terms of Indemnity Bond from RailTel, the selected bidder has to provide the equivalent value PBG from scheduled Bank to RailTel. No Indemnity Bond from Selected Bidder will be accepted in lieu of PBG from Scheduled Bank.
- 14.7. In case KSEB has sought any other types of PBG, at present or in future or else Integrity Pact PBG (presently or in future), same remain applicable on selected Bidder. The Said PBG will be issued by Selected Bidder from Scheduled Bank favouring RailTel Corporation of India Limited. No Indemnity Bond in lieu of such PBG will be accepted by RailTel.
- 14.8 Integrity pact in the format if any, as per KSEB to be provided by the Bidder.

#### **15. Details of Commercial Bid / Financial Bid**

- 15.1. Partner should submit commercial bid strictly as per the format mentioned by KSEB or in subsequent corrigendum's (if any).
- 15.2. The commercial bid should clearly bring out the cost of the services with detailed break- up of taxes.
- 15.3. The rates mentioned in the commercial bid of the CSP will form basis of commercial transaction between RailTel and bidder.
- 15.4. The quantity of 'Line Items' may vary at the time of placing of Purchase Order or during the Contract Period, as communicated by KSEB (in case) to RailTel. In such scenarios, the 'Per Unit' cost will be considered to arrive on contractual amount between RailTel and CSP.
- 15.5. It is also possible that KSEB may surrender / increase, some or all of the quantities of service items ordered to RailTel during the contract period and accordingly the contractual amount between RailTel and CSP shall be considered, at sole discern of RailTel.
- 15.6. It is also possible that during the contract period, KSEB may raise Purchase Order to RailTel for the line items (and respective quantities) which are not mentioned in the pertinent tender of KSEB. In such scenario, RailTel at its sole discretion, may extend the scope of the contract with CSP by placing order to KSEB, on back-to- back basis.
- 15.7. In addition to the Payment Terms, all other Contractual Terms will also be on 'back- to-back' basis between RailTel and CSP, as mentioned in the pertinent KSEB tender. MAF (Manufacturer's Authorization Form) in the name of RailTel and another MAF in Bidders Name (separately with reference to this EOI) from the OEMs, whose product is mentioned in commercial bid format, should also be ensured by the partner. The MAF format and required content should be in-line with KSEB tender, if specifically asked by KSEB in a particular format.

**16. Duration of the Contract Period**

16.1. The contract duration shall be same as of KSEB contract duration with RailTel until otherwise terminated earlier. Indicative contract duration is 6 months in addition to 60 months warranty, unless otherwise terminated/modified, as mentioned in this EOI document and subject to award of contract to RailTel. The contract duration can be renewed /extended by RailTel at its discern, in case KSEB extends / RailTel renews services with RailTel by virtue of extending / renewing / new issuance of one or more Purchase Order(s) placed by KSEB to RailTel.

**17. Restrictions on 'Transfer of Agreement'**

17.1. The CSP shall not assign or transfer its right in any manner whatsoever under the contract / agreement to a third party or enter into any agreement for sub- contracting and/or partnership relating to any subject matter of the contract / agreement to any third party either in whole or in any part i.e., no sub-contracting / partnership / third party interest shall be created.

**18. Suspension, Revocation or Termination of Contract / Agreement**

18.1. RailTel reserves the right to suspend the operation of the contract / agreement, at any time, due to change in its own license conditions or upon directions from the competent government authorities, in such a situation, RailTel shall not be responsible for any damage or loss caused or arisen out of aforesaid action. Further, the suspension of the contract / agreement will not be a cause or ground for extension of the period of the contract / agreement and suspension period will be taken as period spent. During this period, no charges for the use of the facility of the CSP shall be payable by RailTel.

18.2. RailTel may, without prejudice to any other remedy available for the breach of any conditions of agreements, by a written notice as per GCCA of contract or as per CDAC tender condition whichever is issued to the CSP.

RailTel shall terminate/or suspend the contract /agreement under any of the following circumstances:

- a) The CSP failing to perform any obligation(s) under the contract / agreement.
- b) The CSP failing to rectify, within the time prescribed, any defect as may be pointed out by RailTel.
- c) Non adherence to Service Level Agreements (SLA) which RailTel has committed to CDAC.
- d) The CSP going into liquidation or ordered to be wound up by competent authority
- e) If the CSP is wound up or goes into liquidation, it shall immediately (and not more three days) inform about occurrence of such event to RailTel in writing. In such case, the written notice can be modified by RailTel as deemed fit under the circumstances. RailTel may either decide to issue a termination notice or to continue the agreement by suitably modifying the conditions, as deemed fit. It shall be the responsibility of the CSP to maintain the agreed Quality of Service, even during the period when the notice for surrender/termination of contract / agreement is pending and if the Quality of Performance of Solution is not maintained, during the said notice period, it shall be treated as material breach liable for termination at risk and consequent of which CSP's PG related to contract / agreement along with PG related to the Empanelment Agreement with RailTel shall be forfeited, without any further notice.

f) Breach of non-fulfilment of contract / agreement conditions may come to the notice of RailTel through complaints or as a result of the regular monitoring. Wherever considered appropriate RailTel may conduct an inquiry either Suo- moto or on complaint to determine whether there has been any breach in compliance of the terms and conditions of the agreement by the successful bidder or not. The CSP shall extend all reasonable facilities and shall endeavour to remove the hindrance of every type upon such inquiry. In case of default by the CSP in successful implementation and thereafter maintenance of services / works as per the conditions mentioned in this EOI document, the PG(s) of CSP available with RailTel can be forfeited.

## **19. Dispute Settlement**

19.1 In case of any dispute concerning the contract / agreement, both the CSP and RailTel shall try to settle the same amicably through mutual discussion / negotiations. Any unsettled dispute shall be settled in terms of Indian Act of Arbitration and Conciliation 1996 or any amendment thereof. Place of Arbitration shall be New Delhi.

19.2 The arbitral tribunal shall consist of the Sole Arbitrator. The arbitrator shall be appointed by the Chairman & Managing Director (CMD) of RailTel Corporation of India Ltd.

19.3 All arbitration proceedings shall be conducted in English.

## **20. Governing Laws**

20.1. The contract shall be interpreted in accordance with the laws of India. The courts at New Delhi shall have exclusive jurisdiction to entertain and try all matters arising out of this contract.

## **21. Statutory Compliance**

21.1. During the tenure of this Contract nothing shall be done by CSP in contravention of any law, act and/ or rules/regulations, there under or any amendment thereof and shall keep RailTel indemnified in this regard.

22.2. The Bidder shall comply and ensure strict compliance by his/her employees and agents of all applicable Central, State, Municipal and Local laws and Regulations and undertake to indemnify RailTel, from and against all levies, damages, penalties and payments whatsoever as may be imposed by reason of any breach or violation of any law, rule, including but not limited to the claims against RailTel or its Customer under Employees Compensation Act, 1923, The Employees Provident Fund and Miscellaneous Provisions Act, 1952, The Contract Labour (Abolition and Regulation) Act 1970, Factories Act, 1948, Minimum Wages Act and Regulations, Shop and Establishment Act and Labour Laws which would be amended/modified or any new act if it comes in force whatsoever, and all actions claim and demand arising therefrom and/or related thereto.

## **22. Intellectual Property Rights**

22.1. Each party i.e., RailTel and CSP, acknowledges and agree that the other party retains exclusive ownership and rights in its trade secrets, inventions, copyrights, and other intellectual property and any hardware provided by such party in relation to this contract / agreement.

22.2. Neither party shall remove or misuse or modify any copyright, trade mark or any other proprietary right of the other party which is known by virtue of this EOI and subsequent contract in any circumstances

**23. Severability**

- 23.1. In the event any provision of this EOI and subsequent contract with CSP is held invalid or not enforceable by a court of competent jurisdiction, such provision shall be considered separately and such determination shall not invalidate the other provisions of the contract and Annexure/s which will be in full force and effect.

**24. Force Majeure**

- 24.1. If during the contract period, the performance in whole or in part, by other party, of any obligation under this is prevented or delayed by reason beyond the control of the parties including war, hostility, acts of the public enemy, civic commotion, sabotage, Act of State or direction from Statutory Authority, explosion, epidemic, quarantine restriction, strikes and lockouts (as are not limited to the establishments and facilities of the parties), fire, floods, earthquakes, natural calamities or any act of GOD(hereinafter referred to as EVENT) , provided notice of happenings of any such event is given by the affected party to the other, within twenty one (21) days from the date of occurrence thereof, neither party shall have any such claims for damages against the other, in respect of such non- performance or delay in performance. Provided service under this contract shall be resumed as soon as practicable, after such EVENT comes to an end or ceases to exist.
- 24.2. In the event of a Force Majeure, the affected party will be excused from performance during the existence of the force Majeure. When a Force Majeure occurs, the affected party after notifying the other party will attempt to mitigate the effect of the Force Majeure as much as possible. If such delaying cause shall continue for more than sixty (60) days from the date of the notice stated above, the party injured by the inability of the other to perform shall have the right, upon written notice of thirty (30) days to the other party, to terminate this contract. Neither party shall be liable for any breach, claims, and damages against the other, in respect of non-performance or delay in performance as a result of Force Majeure leading to such termination.

**25. Indemnity**

- 25.1. The CSP agrees to indemnify and hold harmless RailTel, its officers, employees and agents (each an "Indemnified Party") promptly upon demand at any time and from time to time, from and against any and all losses, claims, damages, liabilities, costs (including reasonable attorney's fees and disbursements) and expenses (collectively, "Losses") to which the Indemnified party may become subject, in so far as such losses directly arise out of, in any way relate to, or result from:
- a) Any mis -statement or any breach of any representation or warranty made by CSP
  - b) The failure by the CSP to fulfil any covenant or condition contained in this contract by any employee or agent of the Bidder. Against all losses or damages arising from claims by third Parties that any Deliverables (or the access, use or other rights thereto), created by CSP pursuant to this contract, or any equipment, software, information, methods of operation or other intellectual property created by CSP pursuant to this contract, or the SLAs (i) infringes a copyright, trade mark, trade design enforceable in India, (ii) infringes a patent issues in India, or (iii) constitutes misappropriation or unlawful disclosure or used of another Party's trade secrets under the laws of India (collectively, "Infringement Claims"); or

c) Any compensation / claim or proceeding by any third party against RailTel arising out of any act, deed or omission by the CSP

d) Claim filed by a workman or employee engaged by the CSP for carrying out work related to this agreement. For the avoidance of doubt, indemnification of Losses pursuant to this section shall be made in an amount or amounts sufficient to restore each of the Indemnified Party to the financial position it would have been in had the losses not occurred.

25.2. Any payment made under this contract to an indemnity or claim for breach of any provision of this contract shall include applicable taxes.

## **26. Limitation of Liability towards RailTel**

26.1. The CSP (SI/BA) liability under the contract shall be determined as per the Law in force for the time being. The CSP shall be liable to RailTel for loss or damage occurred or caused or likely to occur on account of any act of omission on the part of the CSP and its employees (direct or indirect), including loss caused to RailTel on account of defect in goods or deficiency in services on the part of CSP or his agents or any person / persons claiming through under said CSP, However, such liability of the CSP shall not exceed the total value of the contract.

26.2. This limit shall not apply to damages for bodily injury (including death) and damage to real estate property and tangible personal property for which the CSP is legally liable.

## **27. Confidentiality cum Non-disclosure**

27.1. The Receiving Party agrees that it will not disclose to third party/parties any information belonging to the Disclosing Party which is provided to it by the Disclosing Party before, during and after the execution of this contract. All such information belonging to the Disclosing Party and provided to the Receiving Party shall be considered Confidential Information. Confidential Information includes prices, quotations, negotiated issues made before the execution of the contract, design and other related information. All information provided by Disclosing Party to the Receiving Party shall be considered confidential even if it is not conspicuously marked as confidential.

27.2. Notwithstanding the foregoing, neither Party shall have any obligations regarding non- use or non-disclosure of any confidential information which:

27.2.1. Is already known to the receiving Party at the time of disclosure:

27.2.2. Is or becomes part of the public domain without violation of the terms hereof;

27.2.3. Is shown by conclusive documentary evidence to have been developed independently by the Receiving Party without violation of the terms hereof:

27.2.4. Is received from a third party without similar restrictions and without violation of this or a similar contract.

27.3 The terms and conditions of this contract, and all annexes, attachments and amendments hereto and thereto shall be considered Confidential Information. No news release, public announcement, advertisement or publicity concerning this contract and/or its contents herein shall be made by either Party without the prior written approval of the other Party unless such disclosure or public announcement is required by applicable law.

27.4 Notwithstanding the above, information may be transmitted to governmental, judicial, regulatory authorities, if so, required by law. In such an event, the Disclosing Party shall inform the other party about the same within 30 (thirty) Days of such disclosure.

27.5 This Confidentiality and Non- Disclosure clause shall survive even after the expiry or termination of this contract.

## **28 Assignment**

28.1 Neither this contract nor any of the rights, interests or obligations under this contract shall be assigned, in whole or in part, by operation of law or otherwise by any of the Parties without the prior written consent of each of the other Parties. Any purported assignment without such consent shall be void. Subject to the preceding sentences, this contract will be binding upon, inure to the benefit of, and be enforceable by, the Parties and their respective successors and assigns.

## **29 Insurance**

The CSP shall agree to take insurances to cover all the elements of the project under this EOI including but not limited to Manpower, Hardware, Software and Services etc. as per KSEB tender specified terms.

## **30 Exit Management**

### **30.1 Exit Management Purpose**

30.1.1 This clause sets out the provision, which will apply during Exit Management period. The parties shall ensure that their respective associated entities carry out their respective obligation set out in this Exit Management Clause.

30.1.2 The exit management period starts, in case of expiry of contract, at least 03 months prior to the date when the contract comes to an end or in case of termination contract, on the date when the notice of termination is sent to the CSP. The exit management period ends on the date agreed upon by RailTel or Three (03) months after the beginning of the exit management period, whichever is earlier.

### **30.2 Confidential Information, Security and Data:**

CSP will promptly, on the commencement of the exit management period, supply to RailTel or its nominated agencies the following (if asked by RailTel in writing):

30.2.1 Information relating to the current services rendered and performance data relating to the performance of the services; documentation relating to the project, project's customized source code (if any); any other data and confidential information created as part of or is related to this contract;

30.2.2 All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable RailTel and its nominated agencies, or its replacing vendor to carry out due diligence in order to transition the provision of the services to RailTel or its nominated agencies, or its replacing vendor (as the case may be).

30.3 Employees : Promptly on reasonable request at any time during the exit management period, the CSP shall, subject to applicable laws, restraints and regulations (including in particular those relating to privacy) provide RailTel a list of all employees (with job titles and communication address), dedicated to providing the services at the commencement of the exit management period; To the extent that any Transfer Regulation does not apply to any employee of the CSP, RailTel or the replacing vendor may make an offer of contract for services to such employees of the CSP and the CSP shall not enforce or impose any contractual provision that would prevent any such employee from being hired by RailTel or any replacing vendor.

30.4 Rights of Access to Information: Besides during the contract period, during the exit management period also, if asked by RailTel in writing, the CSP shall be obliged to provide an access of information to RailTel and / or any Replacing Vendor in order to make an inventory of the Assets (including hard software / active / passive), documentations, manuals, catalogues, archive data, Live data, policy documents or any other related material.

**Note:** RailTel at its sole discern may not enforce any or all clauses / sub-clauses under the 'Exit Management' clause due to administrative convenience or any other reasons as deemed fit.

### **31. Waiver**

31.1. Except as otherwise specifically provided in the contract, no failure to exercise or delay in exercising, any right, power or privilege set forth in the contract will operate as a waiver of any right, power or privilege.

### **32. Changes in Contract Agreement**

No modification of the terms and conditions of the Contract Agreement shall be made except by written amendments signed by the both CSP and RailTel.



**ANNEXURE 1****FORMAT FOR PROJECT EXPERIENCE CITATIONS**

<b>Sl. No.</b>	<b>Item</b>	<b>Bidder's Response</b>
1	Name of Bidder entity	
2	Assignment Name	
3	Name & Address of Client	
4	Approximate Value of the Contract (in INR Crores)	
5	Duration of Assignment (months)	
6	Start Date (month/year)	
7	Completion Date (month/year)	
8	Narrative description of the project	
9	Details of Work that defines the scope relevant to the	
10	Documentary Evidence attached	

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 2****EOI COVER LETTER**

(On Organization Letter Head)

EOI Ref No:

Date:

To,

The Joint General Manager (ERS)

RailTel Corporation India Limited,

Kerala Territory Office,

1<sup>st</sup> Floor, Eastern Entry Tower

Ernakulam South Railway Station

Ernakulam – 682016

**KSEB Tender Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024;** latest amendment/ Corrigendum / clarifications.  
**Floated on etender Kerala Portal (<https://etenders.kerala.gov.in/>)**

Dear Sir/ Madam

1. I, the undersigned, on behalf of M/s ....., having carefully examined the referred EOI offer to participate in the same, in full conformity with the said EOI and all the terms and conditions thereof, including corrigendum issued till last date of submission of EOI. It is also undertaken and submitted that we are in abidance of Clause 4 of EOI.
2. I agree to abide by this Proposal, consisting of this letter, our Pre-qualification, Technical and Commercial Proposals, for a period of 210 days from the date fixed for submission of Proposals as stipulated in the EOI and modifications resulting from contract negotiations, and it shall remain binding upon us and maybe accepted by you at any time before the expiration of that period.
3. I acknowledge that the Authority will be relying on the information provided in the Proposal and the documents accompanying the Proposal for selection of the Commercially Suitable Partner (CSP) for there for said Service, and we certify that all information provided therein is true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the Proposal are true copies of their respective originals.
4. I undertake, if our Bid is accepted, to commence our services as per scope of work as specified in the contract document.
5. Until a formal Purchase Order or Contract is prepared and executed, this Bid and supplement / additional documents submitted (if any), together with your written acceptance thereof in your notification of award shall constitute a binding contract between us.

6. I hereby undertake and give unconditional acceptance for compliance of all terms & conditions of KSEB Tender Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024; latest amendment/ Corrigendum / clarifications. Floated on etender Kerala Portal (<https://etenders.kerala.gov.in/>), against this EOI based customer's requirement.
7. I hereby undertake that there will be no deviation from the Terms and Conditions of EOI and KSEB Tender Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024; latest amendment/ Corrigendum / clarifications. Floated on etender Kerala Portal (<https://etenders.kerala.gov.in/>) .

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 3**  
**(Local Content Compliance)**

EOI Ref. No:

Date:

To,

The Joint General Manager (ERS)

RailTel Corporation India Limited,

Kerala Territory Office,

1<sup>st</sup> Floor, Eastern Entry Tower

Ernakulam South Railway Station

Ernakulam – 682016

KSEB Tender Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024; latest amendment/ Corrigendum / clarifications.  
 Floated on etender Kerala Portal (<https://etenders.kerala.gov.in/>)

Dear Sir / Madam

I, the undersigned, on behalf of M/s ....., hereby submits that our technical solution for the 'Scope of Work' mentioned under the EoI document is in compliance of local content requirement and makes us equivalent to 'Class-I local supplier' / 'Class-II local supplier' (mention whichever is applicable) for the EoI under reference, as defined under the order No. P-45021/2/2017-PP(BE-II) dt. 04-June-2020 issued by Ministry of Commerce and Industry, Govt. of India.

I hereby certify that M/s .....fulfils all requirements in this regard and is eligible to be considered and for the submitted bid Local Content Percentage is % (write in figures as well as in words).

I hereby acknowledge that in the event of acceptance of bid on above certificate and if the certificate is found to be false at any stage, the false certificate would be a ground for immediate termination of contract and further legal action in accordance with the Law, including but not limited to the encashment of Bank Guarantee related to Empanelment and Performance Bank Guarantee (PBG) and Security deposit (SD), as available with RailTel, related to this EoI. Signature of Authorized Signatory.

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 4****CHECKLIST OF DOCUMENTS FOR BID SUBMISSION**

KSEB Tender Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024; latest amendment/ Corrigendum / clarifications.  
 Floated on etender Kerala Portal (<https://etenders.kerala.gov.in/>)

Sl. No.	Document
1	EOI Cover Letter (Annexure-02)
2	Technical compliance sheet
3	Price bid
4	Local Content Compliance & Percentage Amount (annexure-03)
5	<b>TECHNICAL BID COVER LETTER</b>
6	<b>COMMERCIAL BID COVER LETTER</b>
7	EMD as per EOI document
8	This EOI copy duly Signed and Stamped by the Authorized Signatory Of Bidder
9	All Annexure/ Appendices/Formats/ Declarations as <b>per</b> KSEB Tender Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024; addressing to RailTel.
10	Compliance of eligibility criteria related documents as per Clause 3
11	Any relevant document found suitable by bidder

**Note:**

1. The technical bid should have a 'Index' at the starting and all pages of bid should be serially numbered and should be traceable as per the 'Index'.
2. All the submitted documents should be duly stamped and signed by the Authorized Signatory at each page.
3. The above checklist is indicative only. RailTel may ask for additional documents from the bidders, as per the requirement

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 5****FORMAT FOR TECHNICAL BID COVER LETTER**

(On Company Letter Head)

To,

The Joint General Manager (ERS)

RailTel Corporation India Limited,

Kerala Territory Office,

1<sup>st</sup> Floor, Eastern Entry Tower

Ernakulam South Railway Station

Ernakulam – 682016

Sub: Submission of the response to the Tender No. <<tender id>>Request for Proposal for the Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme. We, the undersigned, offer to provide services for Request for Proposal for Supply of ISP hardware and Software of Kerala Fibre Optic Network for KSEB in response to the request for proposal dated <insert date> and tender reference no <> "Request for Proposal for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme" by KSEB. We are hereby submitting our proposal online, which includes the pre-qualification, technical bid, and commercial bid.

We hereby declare that all the information and statements made in this technical bid are true and accept that any misinterpretation contained in it may lead to our disqualification.

We undertake, if our proposal is accepted, to initiate the implementation services related to the assignment not later than the date indicated in this tender.

We agree to abide by all the terms and conditions of the RFP and related corrigendum(s)/ addendum(s). We would hold the terms of our bid valid for 210 days from the date of opening of the commercial bid as stipulated in the RFP. We hereby declare that as per RFP requirement, we have not been black listed/ debarred by any Central/ State Government and we are not the subject of legal proceedings for any of the foregoing.

We understand you are not bound to accept any proposal you receive.

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 6****FORMAT FOR COMMERCIAL BID COVER LETTER**

To,  
The Joint General Manager (ERS)  
RailTel Corporation India Limited,  
Kerala Territory Office,  
1<sup>st</sup> Floor, Eastern Entry Tower  
Ernakulam South Railway Station  
Ernakulam – 682016

Dear Sir,

We, the undersigned Bidder, having read and examined in detail all the tender documents with respect to Request for Proposal (RFP) for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme, do hereby propose to provide services as specified in the tender reference No. TENDER NO: **CEIT/ITCSD/10/2024-25 dtd 27.09.2024**

**Price and Validity**

- a) All the prices mentioned in our bid are in accordance with the terms & conditions as specified in the RFP. The validity of bid is 8 months from the date of opening of the commercial bid.
- b) We are an Indian firm and do hereby confirm that our prices are inclusive of all duties, levies etc., excluding GST.
- c) We have studied the clause relating to Indian Income Tax and hereby declare that if any income tax, surcharge on income tax, professional and any other corporate tax is altered under the law, we shall pay the same.

Unit rates: We have indicated in the relevant schedules enclosed, the unit monthly rates for the purpose of accounting of payments as well as for price adjustment in case of any increase / decrease from the scope of work under the contract.

**Deviations:**

We declare that all the services shall be performed strictly in accordance with the RFP irrespective of whatever has been stated to the contrary anywhere else in our bid. Further, we agree that additional conditions, if any, found in our bid documents, shall not be given effect to. We had remitted an EMD as specified in the tender document terms.

**Tender pricing:** we further confirm that the prices stated in our bid are in accordance with your instruction to bidders included in tender documents.

**Qualifying data:** we confirm having submitted the information as required by you in your instruction to bidders. In case you require any other further information/ documentary proof in this regard before evaluation of our tender, we agree to furnish the same in time to your satisfaction.

**Bid price:** we declare that our bid price is for the entire scope of the work as specified in the RFP. These prices are indicated in annexure-commercial bid format attached with our tender as part of the tender.

**Performance bank guarantee and Security Deposit:** we hereby declare that in case the contract is awarded to us, we shall submit the performance bank guarantee. We hereby declare that our tender is made in good faith, without collusion or fraud and the information contained in the tender is true and correct to the best of our knowledge and belief. We understand that our tender is binding on us and that you are not bound to accept a tender you receive.

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization



**ANNEXURE 7****TECHNICAL COMPLIANCE SHEET**

The Service/OEM/MAKE specified are based on the existing network requirement for the present scope of work. This shall be followed as per the special condition of contract as per the relevant conditions of special conditions of contract as appended as per RFP back to basis.

KSEB Tender Ref. No.: CEIT/ITCSD/10/2024-25 dtd 27.09.2024; latest amendment/ Corrigendum / clarifications. Floated on etender Kerala Portal (<https://etenders.kerala.gov.in/>)

**Indicative Bill of Materials**

Indicative Bill of Material at Data Centre & DR Centre

The following is an indicative bill of materials required to carry out the revamping of IT Infrastructure at DC and DR from Day 1

Sl.No	Item	Qty
<b>Data Centre</b>		
<b>A. Compute</b>		
1	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	6
2	Server with 2 x 48 Core 2.3 GHz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVMe	4
3	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME	3
4	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME	3
5	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1)	1
6	Cloud Infra Solutions for Critical workload (For Servers under S/N.2)	1
<b>B. Network infrastructure</b>		
7	Spine switch with 32 Port 100G loaded with 16 SR Optics modules on each spine	2
8	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 24 nos 10G-3 nos on Each leaf	8
9	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 12x25G, 10x10G, 6x1G modules on Each leaf	2
10	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2

11	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
12	NOC LAN Switches 48 Port 1G Copper Port Switch loaded with 2 x 10G Optics on Each Switch	2
13	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	2
14	DCN Fabric Manager as per specifications with required license	1
15	OEM fiber Patch Cords- 25Mtrs	20
16	OEM fiber Patch Cords- 15Mtrs	10
17	OEM fiber Patch Cords- 5Mtrs	20
18	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	Ls
<b>C. Storage &amp; Backup Systems</b>		
19	400TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 5.5 Lakhs IOPS	1
20	48 Port 32Gbps SAN Switches with 48 nos. of 32Gbps SFPs	2
21	Backup Solution- 60 VM & 4 Container worker node licenses	1
22	Tape library with 2xLTO-9 tape drives	1
23	Backup Appliance NL SAS-100TB	1
24	OEM fiber Patch Cords 10/15Mtrs for Servers to SAN Switch connectivity (Should consider based on Server QTY)	Ls
<b>D. EMS/NMS &amp; Mail Messaging System</b>		
25	EMS/NMS Software as per specifications (running in active-Passive mode at DC/DR)	1
26	Mail Messaging System as per specifications (running in active-Passive mode at DC/DR)	1
<b>E. Miscellaneous</b>		
27	42U OEM Racks for Servers/network equipments	4

28	Man power deployment charges (One resource during office hours at Data Centre for a period of one year)	1
29	Desktops type-I for NOC Room	10
30	Desktops type-II for NOC Room	5
31	Laptops for System/Network Administrators	2
32	Miscellaneous Item-1	1
33	Miscellaneous Item-2	1
34	Miscellaneous Item-3	1
<b>DR Centre</b>		
<b>A. Compute</b>		
35	Server with 2 x 32 Core 2.5 Ghz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	4
36	Server with 2 x 48 Core 2.3 Ghz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	3
37	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1)	1
<b>B. Network infrastructure</b>		
38	Spine switch with 12/24 Port 100G loaded with 8 SR Optics modules on each spine	2
39	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 12 nos and 10G-12 on Each leaf	2
40	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 6x25G, 5x10G, 6x1G modules on each Leaf	2
41	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
42	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
43	NOC LAN Switches 24 Port 1G Copper Port Switch loaded with 2 x 10G Optics	1
44	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	1
45	DCN Fabric Manager as per specifications with required license	1
46	OEM fiber Patch Cords- 25Mtrs	10

47	OEM fiber Patch Cords- 15Mtrs	6
48	OEM fiber Patch Cords- 5Mtrs	10
49	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	Ls
<b>C. Storage &amp; Backup</b>		
50	200TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G , Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 4 Lakhs IOPS	1
51	48 Port 32Gbps SAN Switches with 24 nos. of 32Gbps SFPs	2
52	Backup Solution – 5VM License	1
53	Tape drive- LTO-9, 18TB drive	1
54	Miscellaneous Item-1	1
55	Miscellaneous Item-2	1
56	Miscellaneous Item-3	1
<b>Remote Location</b>		
57	Backup Appliance NL SAS – 100TB	1
<b>Installation and Commissioning</b>		
58	Supply, installation, configuration, integration, testing, commissioning and go-live of all hardware and software components	1

**Note:**

1. The BoQ items mentioned above are indicative only. The bidder is liable to provide additional items/services required, if any, for providing all required features/ services mentioned in the Scope of Work
2. All transceivers of required quantity for Servers, Switches, Storage etc. shall be supplied from the respective OEMs

**Technical Specifications****Item No. 1 & Item no. 35 of BoQ**

Server with 2 x 32 Core 2.5 Ghz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME, Total Qty - 10 Nos

Sl No	Features	Specifications	Compliance Y/N
1	Form Factor	2U Rack Mountable	

2	Configured CPU	two nos. of Latest Intel Xeon Gold processors, (To be populated with dual processor each having min 32 Cores processor 2.5 GHz clock speed, 60MB L3 Cache)	
4	Memory slots	32 DDR5 DIMM slots RDIMMS& LR DIMMS supporting speeds min 4000MT/s and scalable up to 8TB of Memory	
5	Memory configured	Server should be configured with 512GB min 4000 Mhz memory should be offered in each node.	
6	HDD Bays	Minimum 8 SFF SAS/SATA HDDs or SAS/SATA SSDs or NVMe SSDs.	
8	Boot Optimised SSD's	Each Server should be configured with 2 * 480GB using latest M.2 SSD Drives.	
9	RAID Controller	12Gbps SAS RAID controller with 4GB Cache supporting RAID 0,1, 5, 6,10, 50, 60 supporting capacity drives configured in system.	
10	I/O slots	Atleast 5 * PCIe Gen 4 Slots and 3 Gen 5 Slots	
11	FC HBA	Two numbers of single/dual port 32G FC loaded with two nos. of SR optics	
12	Ethernet ports	Two numbers of dual Port 10/25G Ethernet Card Populated with 4*25G SFP SR Optics	
13	Certification and Compliance	Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), Oracle	
14	Power Supply	Platinum rated redundant Power Supply	
15	Management Integration	Support for integration with various reputed virtualisation platform management software	
16	Power & temperature	Integrated diagnostics and Power monitoring and reporting, Dynamic Power capping.	
	Configuration & Management	<ul style="list-style-type: none"> <li>* System should support multiple management interface like Web UI, CLI and XML API. Management solution should be able to manage different form factor hardware and provide single console.</li> <li>* Real-time out-of-band hardware performance monitoring &amp; alerting.</li> <li>* Remote Power On, Off and reset from Web UI, XML API and KVM.</li> <li>* The management tool should be able to provide global resource pooling and policy management to enable policy based automation and capacity planning</li> <li>* Zero-touch repository manager and self-updating firmware system, Automated hardware configuration and Operating System deployment to multiple servers</li> <li>* Virtual IO management / stateless computing</li> <li>* The server should support industry standard management protocols like IPMI v2 and SNMP v3 and Redfish v1.01</li> <li>* Console record and play, Virtual Media, LDAP &amp; HTML5 remote</li> </ul>	

17		<p>control.</p> <ul style="list-style-type: none"> <li>* Server management software should provide capability to view health , inventory for third-party compute, network, storage, integrated systems, virtualization, and containers.</li> <li>* The management software should participate in server provisioning, device discovery, inventory, diagnostics, monitoring, fault detection, auditing, and statistics collection.</li> <li>* Server management system should provide an alert in case the system is not part of OEM Hardware Compatibility list &amp; should provide anti-counterfeit.</li> <li>* The proposed management solution should provide proactive security &amp; software advisory alerts and should outline the fixes required to address the issues.</li> <li>* The proposed management solution should analyze</li> </ul>	
		<p>current configurations &amp; identify potential issues due to driver &amp; firmware incompatibility</p> <ul style="list-style-type: none"> <li>* The proposed management solution should provide policy control to prevent drift of server configurations.</li> <li>* The proposed solution should have customizable dashboard to show overall faults / health / inventory for all managed infrastructure. With option to create unique dashboards for individual users. The user should have flexibility to select names for dashboards and widgets (ex:-health, utilization etc.)</li> </ul>	
26	Server Node Security	<p>Should have a cyber resilient architecture for a hardened server design for protection, detection &amp; recovery from cyber attacks. Should protect against firmware which executes before the OS boots</p> <ul style="list-style-type: none"> <li>* Hardware based Root of Trust</li> <li>* Signed firmware updates</li> <li>* Secure default passwords</li> <li>* Secure alerting</li> <li>* Automatic BIOS recovery</li> <li>* Rapid OS recovery</li> <li>* Chassis Intrusion Detection</li> <li>* System Lockdown</li> <li>* System Drift Detection</li> <li>* Configuration upgrades should be only with cryptographically signed firmware and software</li> </ul>	
32	IPV 6 compliance	The Hardware should be IPV 6 Compliant ready	
33	Warranty	5 years On-site comprehensive warranty with 24x7x365 hardware support	

**Item No. 2 & Item no. 36 of BoQ**

Server with 2 x 48 Core 2.3 Ghz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME, SR Optics, Total Qty - 7 Nos

SI No	Features	Specifications	Compliance (Y/N)
1	<b>Form Factor</b>	2U Rack Mountable	
2	<b>CPU</b>	Two numbers of Latest Intel® Xeon® Platinum Processors, (To be populated with dual processor each having min 48 Cores processor 2.3 GHz clock speed, 300MB L3 Cache)	

4	<b>Memory slots</b>	32 DDR5 DIMM slots RDIMMS& LR DIMMS supporting speeds up to min 4000MT/s and scalable up to 8TB of Memory	
5	<b>Memory configured</b>	Server should be configured with 1024GB min 4000 Mhz memory should be offered in each node.	
6	<b>HDD Bays</b>	Minimum 8 slots for SFF SAS/SATA HDDs or SAS/SATA SSDs or NVMe SSDs.	
8	<b>Boot Optimised SSD's</b>	Each Server should be configured with 2 * 480GB using latest M.2 SSD Drives.	
9	<b>RAID Controller</b>	12Gbps SAS RAID controller with 8GB Cache supporting RAID 0,1, 5, 6,10, 50, 60 supporting capacity drives configured in system.	
10	<b>I/O slots</b>	Atleast 5 * PCIe Gen 4 Slots and 3 Gen 5 Slots	
11	<b>FC HBA</b>	Two numbers of Single/dual port 32G FC adapter loaded with 2 SR Optics	
12	<b>Ethernet ports</b>	Two numbers of dual Port 10/25G Ethernet Ports. Populated with 4*25G SR Optics	
13	<b>Certification and Compliance</b>	Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), Oracle	
14	<b>Power Supply</b>	Platinum rated redundant Power Supply	
15	<b>Management Integration</b>	Support for integration with various reputed virtualisation platform management software	
16	<b>Power &amp; temperature</b>	Integrated diagnostics and Power monitoring and reporting, Dynamic Power capping.	

17	<b>Configuration &amp; Management</b>	<ul style="list-style-type: none"> <li>* System should support multiple management interface like Web UI, CLI and XML API. Management solution should be able to manage different form factor hardware and provide single console.</li> <li>* Real-time out-of-band hardware performance monitoring &amp; alerting.</li> <li>* Remote Power On, Off and reset from Web UI, XML API and KVM.</li> <li>* The management tool should be able to provide global resource pooling and policy management to enable policy based automation and capacity planning</li> <li>* Zero-touch repository manager and self-updating firmware system, Automated hardware configuration and Operating System deployment to multiple servers</li> <li>* Virtual IO management / stateless computing</li> <li>* The server should support industry standard management protocols like IPMI v2 and SNMP v3 and Redfish v1.01</li> <li>* Console record and play, Virtual Media, LDAP &amp; HTML5 remote control.</li> <li>* Server management software should provide capability to view health , inventory for third-party compute, network, storage, integrated systems, virtualization, and containers.</li> <li>* The management software should participate in server provisioning, device discovery, inventory, diagnostics, monitoring, fault detection, auditing, and statistics collection.</li> <li>* Server management system should provide an alert in case the system is not part of OEM Hardware Compatibility list &amp; should provide anti-counterfeit.</li> <li>* The proposed management solution should provide proactive security &amp; software advisory alerts and should outline the fixes required to address the issues.</li> <li>* The proposed management solution should analyze current configurations &amp; identify potential issues due to driver &amp; firmware incompatibility</li> <li>* The proposed management solution should provide policy control to prevent drift of server configurations.</li> <li>* The proposed solution should have customizable dashboard to show overall faults / health / inventory for all managed infrastructure. With option to create unique dashboards for individual users. The user should</li> </ul>	
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		have flexibility to select names for dashboards and widgets (ex:-health, utilization etc.)	
26	<b>Server Node Security</b>	<p>Should have a cyber resilient architecture for a hardened server design for protection, detection &amp; recovery from cyber attacks Should protect against firmware which executes before the OS boots</p> <ul style="list-style-type: none"> <li>* Hardware based Root of Trust</li> <li>* Signed firmware updates</li> <li>* Secure default passwords</li> <li>* Secure alerting</li> <li>* Automatic BIOS recovery</li> <li>* Rapid OS recovery</li> <li>* Chassis Intrusion Detection</li> <li>* System Lockdown</li> <li>* System Drift Detection</li> <li>* Configuration upgrades should be only with cryptographically signed firmware and software</li> </ul>	
32	<b>IPV 6 compliance</b>	The Hardware should be IPV 6 Compliant ready	
33	<b>Warranty</b>	5 years On-site comprehensive warranty with 24x7x365 hardware support	

**Item No. 3 & Item no. 4 of BoQ**

Server with 2 x 32 Core 2.5 Ghz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME, SR Optics, Total Qty – 6 Nos

Sl No	Features	Specifications	Compliance (Y/N)
1	<b>Form Factor</b>	2U Rack Mounted	
2	<b>CPU</b>	two nos. of AMD EPYC Processors, (To be populated with dual processor each having min 32 Cores processor 2.5 GHz clock speed, 128MB L3 Cache)	
4	<b>Memory slots</b>	32 DDR5 DIMM slots RDIMMS& LR DIMMS supporting speeds up to min 4000MT/s and scalable up to 8TB of Memory	
5	<b>Memory configured</b>	Server should be configured with 512GB min 4000 Mhz memory should be offered in each node.	
6	<b>Drive Bays</b>	Up to 8 SFF SAS/SATA HDDs or SAS/SATA SSDs or NVMe SSDs.	
8	<b>Boot Optimised SSD's</b>	Each Server should be configured with 2 * 480GB using latest M.2 SSD Drives.	
9	<b>RAID Controller</b>	12Gbps SAS RAID controller with 4GB Cache supporting RAID 0,1, 5, 6,10, 50, 60 supporting capacity drives configured in system.	
10	<b>I/O slots</b>	Atleast 5 * PCIe Gen 4 Slots and 3 Gen 5 Slots	
11	<b>FC HBA</b>	Two numbers of Single/dual port 32G FC with two nos. of SR Optics	
12	<b>Ethernet ports</b>	Two numbers of dual Port 10/25G Ethernet Ports. Populated with 4*25G SR Optics	
13	<b>Certification and Compliance</b>	Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), Oracle	
14	<b>Power Supply</b>	Platinum rated redundant Power Supply	
15	<b>Management Integration</b>	Support for integration with various reputed virtualisation platform management software	
16	<b>Power &amp; temperature</b>	Integrated diagnostics and Power monitoring and reporting, Dynamic Power capping.	

17	<b>Configuration &amp; Management</b>	<ul style="list-style-type: none"> <li>* System should support multiple management interface like Web UI, CLI and XML API. Management solution should be able to manage different form factor hardware and provide single console.</li> <li>* Real-time out-of-band hardware performance monitoring &amp; alerting.</li> <li>* Remote Power On, Off and reset from Web UI, XML API and KVM.</li> <li>* The management tool should be able to provide global resource pooling and policy management to enable policy based automation and capacity planning</li> <li>* Zero-touch repository manager and self-updating firmware system, Automated hardware configuration and Operating System deployment to multiple servers</li> <li>* Virtual IO management / stateless</li> </ul>	
		<p>computing</p> <ul style="list-style-type: none"> <li>* The server should support industry standard management protocols like IPMI v2 and SNMP v3 and Redfish v1.01</li> <li>* Console record and play, Virtual Media, LDAP &amp; HTML5 remote control.</li> <li>* Server management software should provide capability to view health , inventory for third-party compute, network, storage, integrated systems, virtualization, and containers.</li> <li>* The management software should participate in server provisioning, device discovery, inventory, diagnostics, monitoring, fault detection, auditing, and statistics collection.</li> <li>* Server management system should provide an alert in case the system is not part of OEM Hardware Compatibility list &amp; should provide anti-counterfeit.</li> <li>* The proposed management solution should provide proactive security &amp; software advisory alerts and should outline the fixes required to address the issues.</li> <li>* The proposed management solution should analyze current configurations &amp; identify potential issues due to driver &amp; firmware incompatibility</li> <li>* The proposed management solution should provide policy control to prevent drift of server configurations.</li> <li>* The proposed solution should have customizable dashboard to show overall faults / health / inventory for all managed infrastructure. With</li> </ul>	

		option to create unique dashboards for individual users. The user should have flexibility to select names for dashboards and widgets (ex:-health, utilization etc.)	
26	<b>Server Node Security</b>	<p>Should have a cyber resilient architecture for a hardened server design for protection, detection &amp; recovery from cyber attacks Should protect against firmware which executes before the OS boots</p> <ul style="list-style-type: none"> <li>* Hardware based Root of Trust</li> <li>* Signed firmware updates</li> <li>* Secure default passwords</li> <li>* Secure alerting</li> <li>* Automatic BIOS recovery</li> <li>* Rapid OS recovery</li> <li>* Chassis Intrusion Detection</li> <li>* System Lockdown</li> <li>* System Drift Detection</li> <li>* Configuration upgrades should be only with cryptographically signed firmware and software</li> </ul>	
32	<b>IPV 6 compliance</b>	The Hardware should be IPV 6 Compliant ready	
33	<b>Warranty</b>	5 years On-site comprehensive warranty with 24x7x365 hardware support	

**Item No. 5 of BoQ**

Cloud Infra Solution for Digital Infrastructure workload Qty – 1 No.

<b>S. No.</b>	<b>Description</b>	<b>Compliance (Y/N)</b>
1	The proposed virtualization solution should be Linux based and can be able to run & manage Linux virtual machine & container workloads.	
2	The proposed virtualization solution should have 24x7 support directly from the OEM and the OEM should have minimum one support center in India.	

3	The proposed virtualization solution should allow creating, modifying, and destroying virtual machines, and their resources, using web interface or CLI and provide declarative way of VM and its infrastructure components delivery. The platform should provide management tools such as building, copying, and manage running, starting, stopping, listing, and removing VMs and containers and images.	
4	The proposed virtualization solution should provide VM details including - Labels, annotations, Configured OS, Template used, if any, Configured boot order, Associated workload profile, Flavor, Additional details about scheduling, Node selector, tolerations, (anti)affinity rules, Services configured for the VM	
5	The proposed virtualisation platform should sit directly on bare metal server hardware and operating system as well with no dependency on a virtualization hypervisor for greater reliability and security.	
6	The proposed solution should automatically manage the availability and scalability of the control plane nodes responsible for scheduling VMs, managing availability, storing cluster data, and other key tasks.	
7	The proposed virtualization solution should be able to import and clone existing virtual machines, including Red Hat Virtualization virtual machines.	
8	The proposed virtualization solution should be able to do live migrate virtual machines between nodes, manage network interface controllers and storage disks attached to virtual machines.	
9	The proposed virtualization solution should provide flavor of VMs that represents the preconfigured CPU and RAM assignments and able to customize VMs by selecting the option, which includes CPU/memory, storage, network, cloud-init, and more	
10	The proposed virtualization solution should provide default templates and administrators should be able to create and customize additional resources as needed.	
11	The proposed virtualization solution should be able to edit/add network adapters which includes - attaching Multiple NIC models for guest OS compatibility or paravirtualized performance, Masquerade and MAC address customization if desired.	
12	The proposed virtualization solution should be able to edit/add persistence storage which includes - sourcing disk from i) Importing QCOW2 or raw images ii) New or existing PVCs iii) Clone existing PVCs iv) Using SATA/SCSI interface for compatibility	
13	The proposed virtualization solution should allow selecting from available storage class for new or cloned disks by customizing volume and access mode as needed.	
14	The proposed virtualization solution should provide general overview about the Virtual Machines, it should populate from	

	guest when the integrations are available.	
15	The proposed virtualization solution should provide configured hardware inventory details with access to view/manage VMs.	
16	The proposed virtualization solution should provide action menu to quick access to common VM tasks - i) Start/stop/restart ii)Live migration iii)Clone iv)Edit application group, labels, and annotations v)Delete	
17	The proposed virtualization solution should have capabilities to run container alongside Virtual Machines with the common management plane, networking, storage between containers and VMs	
18	The proposed virtualisation platform should provide Custom Resource Definitions (CRDs) for defining and managing the VMs and apply the declarative configuration management practices to the VM workloads	
19	The proposed virtualisation platform should have a native migration toolkit to provide VM migration services from VMWare, OpenStack, RHV and OpenShift Virtualization.	
20	The proposed virtualisation platform should provide developers with a consistent experience for deploying and managing both VMs and containers through Kubernetes APIs.	
21	The proposed virtualisation platform should allow the VMs to take advantage of Kubernetes features such as scheduling, scaling and resource management, making them more dynamic and adaptable to changing workloads.	
22	The proposed virtualization platform should provide unified networking for both containers and VMs allowing them to communicate seamlessly within the Cluster or	
23	The proposed virtualization platform should provide self service VM provisioning options and let users rapidly and reliably deploy pre approved, security-compliant virtual machine configurations, when they need them and without opening an IT service ticket.	
24	The proposed platform should provide a base operating system image with software collections to build custom images on linux and should provide updates on base image for software collection updates and vulnerabilities. It must also include OEM tested and supported base images for unlimited instance deployments.	
25	The proposed solution should have an extensive ISV ecosystem to choose third party solutions to avoid vendor lockin	
26	Cluster upgrade should ensure the workload high availability during the operation, upgrade with availability of the one click update mechanism, API, the core database, and cluster ingress and routing during the master node upgrade. Worker node should be upgradable in a rolling upgrade fashion keeping the entire workload available during the updates/upgrades of platform version. Proposed platform should support over the air minor updates/upgrades to maintain consistency and reduce time to patch the platform	

	using update service to see the valid updates and update paths based on current component versions.	
27	Proposed solution should have Automated Installation to reduce the time to start using Assisted Installer or Installer/User Provisioned Infrastructure methods.	
28	Proposed platform should support disconnected install for secure/sensitive deployments. All capabilities mentioned here shall work without the internet based deployments and proposed platform shall have no dependency on any cloud and OEM hosted solutions. Updates / Upgrade can be hosted in air gapped manner.	
29	Platform should have helm chart support for dependency management and package installation	
30	Proposed solution should support image templates to allow users to define reusable configurations for applications and components, streamlining application deployment and ensuring consistent configurations across environments	
31	The proposed solution should prevent containers/VMs requiring root access from running by default.	
32	The proposed platform's underlying operation system for control plane and worker node must be SELinux enabled by default to protect from CVE vulnerabilities	
33	The proposed platform should support disk encryption for worker and master nodes with AES256 or stronger cipher and should support FIPS Validated cluster to be able to process cryptographic libraries.	
34	The proposed solution should provide OAuth server for token-based authentication and RBAC to expose cluster API's and also secure such API by x.509 certificates.	
35	The proposed solution should be capable of integration with a variety of Authentication Providers including the following: HTTPasswd, Keystone, LDAP V3, OpenLDAP, Request Header, Github, Google, OpenID Connect, GitLab	
36	The proposed virtualization solution should support storage plugin support for: NFS V4, iSCSI, Fiber Channel, Local Storage, HostPath, EmptyDir, AWS - S3, EBS GCE - File, block, object, Azure - File, Volume, Object, vSphere - File, Block	
37	The proposed virtualization solution should support following CSI Plugins: CSI Resize, CSI Snapshot, CSI Clone	
38	The proposed virtualization platform should have built-in Software Defined Networking services having the ability to set network policies and manage ingress and egress communications for the cluster and able to load balance ingress requests.	
39	The proposed platform should have an egress firewall to limit VM/pod connection public Internet to improve security and should be able to define network policies within platform to restrict communication between pods/VMs.	

40	The proposed platform shall have capabilities to use external SDN (using CNI) instead of mandatory own SDN to ensure effective performance and interoperability.	
41	The proposed platform should provide the capability to encrypt traffic to the Control Planes. The platform should offer full, supported access to the CNI, including support for any third party software-defined networking solution from OEM's certified ISV ecosystem deployable on platform.	
42	The proposed platform should provide a way to expose applications to external traffic, enabling them to be accessed from outside the cluster. It should provide out-of- box support for wildcard routing	
43	The proposed platform should have been tested against the following architecture: x86_64, s390x, ppc64le	
44	The proposed platform should have controls access to cluster content and operator controlled life-cycle services. The proposed platform should be accessible via GUI and CLI.	
45	The proposed virtualization platform should be deployable as compact cluster deployment with 3-node cluster to simplify VMs deployment and should be able to stretch the cluster with additional local/remote worker nodes.	
46	The proposed platform should provide the capability to encrypt traffic to the Control Planes. The platform should offer full, supported access to the CNI, including support for any third party software-defined networking solution from OEM's certified ISV ecosystem deployable on platform.	
47	Proposed platform should provide default security context constraints, pod security policies, network and storage settings, service account configuration, Security- Enhanced Linux (SELinux) integration, HA Proxy edge routing configuration, and other standard protections.	
48	The proposed platform should be 100% Certified by the CNCF and truly based on open source and open standards which spurs innovation without any complex proprietary layers.	
49	5 Year, SLA based comprehensive support shall be provided by the bidder. This includes installation, configuration, integration, finetuning, software updates and upgrades required to ensure reliable and resilient functioning of the VM/Container workload.	

**Item No. 6 of BoQ**

Cloud Infra Solution for Critical Workload Qty – 1 No.

Sr.No	Component	Description	Compliance (Y/N)
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1	Installation, Testing and Training	Virtualisation Software, Installation, Implementation, Testing & Training	
2	Virtualisation Software - Essential Functionality	<ul style="list-style-type: none"> <li>• Linux Based</li> <li>• Virtualisation Software with support for 5 years</li> <li>• Virtualisation Software should support VM and OS Containers on the same platform</li> </ul>	
3	Software Features	a) Software should ensure zero downtime of System. High Availability. b) The unit of delivery should be Subscription per CPU (Processor) configuration c) Software should not have any Single point of failure d) Software should support KVM or Linux Container (LXC) e) Software should be compatible with any of standard Server Hardware and defines software defined architecture f) Software should support Windows and Linux platforms together g) Software should support Live Migration of VM's and Containers h) Software should support Snapshot Backups, Integrated Backup and Restore Mechanism i) Software should support Disaster Recovery (DR) or have suitable backup recovery provisions j) Software should support unlimited Web-based Management Interface to manage Compute, Network and Storage. Multi-Master Design, Command Line(UNIX Shell/Windows Powershell), API k) Software should have MultiMaster support l) Software should be able to administer from any compatible node and should not demand dedicated resources for management m) Software should support Role-based Administration, Multiple authentication sources (LDAP/Linux PAM std. authentication/Microsoft Active Directory/etc.) n) Software should support Network storage (NAS/SAN) types like iSCSI target, NFS Share, CIFS Share, Ceph RBD, Directly use iSCSI LUNs, GlusterFS, etc. o) Software should support Local storage types like ZFS, Directory, local backing devices like block devices, FC devices, DRBD, etc p) Software should support bridged networking model, VLANs (IEEE 802.1q) and network bonding, etc.. q) Software should support Integrated Firewall on any VM or Containers and to create 'Security Groups'	
4	Support & SLA	5 Year, SLA based comprehensive support shall be provided by the bidder. This includes installation, configuration, integration, finetuning, software updates and upgrades required to ensure reliable and resilient functioning of the VM/Container workload.	

**Item No. 7 & 38 of BoQ****Spine Switch for Data Centre & DR Centre**

S.No	Specification	Compliance Yes/No
1a	<b>Architecture for DC Spine switches</b>	
	The switch should have at least 32 port 40/100G QSFP28 ports, supplied with 16 nos. of 100G SR Optics modules	
	The Switch should support,1 RJ-45 serial console port,1 RJ-45 management port and 1 USB port and min	

S.No	Specification	Compliance Yes/No
	1GB/64GB flash/SSD, 8GB/32GB SDRAM and 32MB Packet buffer.	
	The switch should support hot-swappable dual power supply and four fan tray	
	At least 6.4 Tbps switching capacity and 2000 million pps Throughput	
	The switch should support MAC Address table size of 90K entries	
	Switch should at least support 130K routing entries IPv4, 30k entries (IPv6)	
1b	Architecture for DR Spine Switches	
	The switch should have at least 12/24 port 40/100G QSFP28 ports with DC grade switch and it should support advanced Layer 3, supplied with 8 nos. of 100G SR Optics modules	
	The Switch should support,1 RJ-45 serial console port,1 RJ-45 management port and 1 USB port and min 1GB/64GB flash/SSD, 8GB/32GB SDRAM and 32MB Packet buffer.	
	The switch should support hot-swappable dual power supply and four fan tray	
	At least 2.4 Tbps switching capacity and 800 million pps Throughput	
	The switch should support MAC Address table size of 90K entries	
	Switch should at least support 130K routing entries IPv4, 30k entries (IPv6)	
2	Quality of Service (QoS)	
	Switch system should support 802.1P classification and marking of packet using COS & DSCP	
	The proposed switch should support Strict priority (SP) queuing and Deficit Weighted Round Robin (DWRR) / WRR	
3	Layer 3 and Data Centre optimized	
	The Switch should have cut-through and nonblocking architecture	
	The Switch should have Advanced modular operating system	
	The Switch should support for IEEE 802.1Qbb Priority Flow Control (PFC), Data Centre Bridging Exchange (DCBX), IEEE 802.1Qaz Enhanced Transmission Selection (ETS), Explicit Congestion Notification (ECN)	

	support RoCE environments	
	The Switch should support Jumbo frames sizes of up to 9K bytes	
	The Switch should support VXLAN and EVPN (MP-BGP)	
	The switch should support BGP EVPN Route Type 2 and Route Type 5 for the overlay control plane	
S.No	Specification	Compliance Yes/No
	The Switch should have dynamic Protocol and must support Policy-based routing, ECMP, VRRP, OSPF/ IS-IS and IPv6, BGP and MP BGP	
	The proposed switch should support min 256 VRFs	
	The Switch should support 7K Multicast Routing and PIM Dense and Sparse modes	
	Proposed Switches must support Micro-Segmentation architecture to optimise the east - west traffic flow inside the data centre	
	The proposed switches in the DCN fabric should support a Stateful/Stateless firewall natively from day 1 to achieve the Micro-segmentation for east-west traffic.	
4	Manageability	
	The Switch should support ingress and egress port monitoring and traceroute and ping	
	Switch should provide remote login for administration using SSH v2	
	The Switch should support multiple configuration files to be stored to a flash image	
	The Switch should support sFlow (RFC 3176)	
	The Switch should support SNMP v1, v2c and v3	
	Switch should support for capturing packets for identifying application performance using local and remote port mirroring or ERSPAN (Encapsulated Remote SPAN ) for packet captures.	
	Switch should support for Management and monitoring status using different type of Industry standard NMS using: SNMP V3 with encryption	
	The switch OS should support programmability through gRPC/REST APIs and Python scripting or equivalent.	

	Flow telemetry should support hardware acceleration so that it is not impacting CPU performance	
	The Switch should support NTP	
5	Resiliency and high availability	
	The Switch should support IEEE 802.1w Rapid Convergence Spanning Tree Protocol	
	The Switch should support IEEE 802.1s Multiple Spanning Tree	
	The Switch should support Virtual Router Redundancy Protocol (VRRP)	
	The Switch should support Bidirectional Forwarding Detection (BFD) to enables link connectivity monitoring and reduces network convergence time for OSPF/IS-IS, BGP and VRRP	
6	Layer 2 switching	
	The Switch should support 4000 VLAN	
S.No	Specification	Compliance Yes/No
	Switch should support layer 2 extension over VXLAN across all Data Centre to enable VM mobility & availability	
	The Switch should support IEEE 802.3x Flow Control	
	The Switch should support Ethernet Link Aggregation	
	The Switch should support IEEE 802.3ad Link Aggregation of Supports up to 48 LAGs, with up to 16 members per LAG	
	The Switch should support STP (IEEE 802.1D), Rapid STP (RSTP, IEEE 802.1w), and Multiple STP (MSTP, IEEE 802.1s)	
	The Switch should support IGMP Snooping provide Layer 2 optimisation of multicast traffic	
7	Layer 3 services	
	The Switch should support Address Resolution Protocol (ARP)	
	The Switch should determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP	

	Switch should support DHCP snooping and ARP Inspection to ensure host integrity by preventing malicious users from exploiting the insecure nature of the ARP protocol	
8	Security	
	The Switch should support RADIUS/TACACS+	
	The Switch should support Secure shell encrypt all transmitted data for secure remote CLI access over IP networks	
	The Switch should support IEEE 802.1X and RADIUS network logins	
	The Switch should support allow access only to specified MAC addresses, which can be learned or specified by the administrator	
9	Certification	
	The switch should have UL 60950-1, CAN/CSA C22.2 No 60950-1, IEC 60950-1, EN 60950-1, Emissions : FCC Part 15 (CFR 47) CLASS A, ICES-003 CLASS A, VCCI CLASS A, CISPR 22/32 CLASS A , EN 55022/55032 CLASS A EN 61000-3-2, EN 61000-3-3, or Equivalant	
S.No	Specification	Compliance Yes/No
10	MISCELLANEOUS POINTS	
	Console cable and power cable (As per Indian standards) as per customer requirement to be provided. All Cables shall be factory-terminated.	
	All the proposed switches and features must support day 1 without addon any license	
	The Switches should have 5-year warranty with 24x7 support directly from OEM and advance replacement.	
	All switches and Transceiver module should be from same OEM.	
	Manufacturers Authorization Letter Specific to this tender must be submitted. Tender submitted without MAF will be rejected.	

**Item No. 8 & 39 of BoQ**

Leaf Switches with 48x25G downlink ports

<b>S.No</b>	<b>Specification</b>	<b>Compliance Yes/No</b>
<b>1</b>	<b>Architecture</b>	
a	The switch should have at least 48 x 10/25GbE and 6 x 100GbE fixed ports, supplied with SR Optics 100G- 2 nos., 25G- 24 nos., 10G- 3 nos. for BOQ Item no. 8 for DC	
b	The switch should have at least 48 x 10/25GbE and 6 x 100GbE fixed ports, supplied with SR Optics, 100G- 2 nos., 25G- 12 nos., 10G- 12 nos. for BoQ Item no. 36 for DR	
	The Switch should support,1 RJ-45 serial console port,1 RJ-45 management port and 1 USB port and min 1GB/64GB flash/SSD, 8GB/32GB SDRAM and 32MB Packet buffer.	
	The switch should support hot-swappable dual power supply and four fan tray	
	At least 3.64 Tbps switching capacity and 1200/2000 million pps Throughput	
	The switch should support MAC Address table size of 90K entries	
	Switch should at least support 130K routing entries IPv4, 30k entries (IPv6)	
<b>2</b>	<b>Quality of Service (QoS)</b>	
	Switch system should support 802.1P classification and marking of packet using COS & DSCP	
	The proposed switch should support Strict priority (SP) queuing and Deficit Weighted Round Robin (DWRR) / WRR	
<b>3</b>	<b>Layer 3 and Data centre optimized</b>	
<b>S.No</b>	<b>Specification</b>	<b>Compliance Yes/No</b>
	<b>The Switch should have cut-through and nonblocking architecture</b>	
	<b>The Switch should have Advanced modular operating system</b>	
	<b>The Switch should support for IEEE 802.1Qbb Priority Flow Control (PFC), Data Center Bridging Exchange (DCBX), IEEE 802.1Qaz Enhanced Transmission Selection (ETS), Explicit Congestion Notification (ECN) support RoCE environments</b>	
	<b>The Switch should support Jumbo frames sizes of up to 9K bytes</b>	
	<b>The Switch should support VXLAN and EVPN (MP-BGP)</b>	
	<b>The switch should support BGP EVPN Route Type 2 and Route Type 5 for the overlay control plane</b>	

	<b>The Switch should have dynamic Protocol and must support Policy-based routing, ECMP, VRRP, OSPF/ IS-IS and IPv6, BGP and MP BGP</b>	
	<b>The proposed switch should support min 256 VRFs</b>	
	<b>The Switch should support 7K Multicast Routing and PIM Dense and Sparse modes</b>	
	<b>Proposed Switches must support Micro-Segmentation architecture to optimise the east - west traffic flow inside the data centre</b>	
	<b>The proposed switch in the DCN fabric should support a Stateful/Stateless firewall natively from day 1 to achieve the Micro-segmentation for east-west traffic.</b>	
<b>4</b>	<b>Manageability</b>	
	<b>The Switch should support ingress and egress port monitoring and traceroute and ping</b>	
	<b>Switch should provide remote login for administration using SSH v2</b>	
	<b>The Switch should support multiple configuration files to be stored to a flash image</b>	
	<b>The Switch should support sFlow (RFC 3176)</b>	
	<b>The Switch should support SNMP v1, v2c and v3</b>	
	<b>Switch should support for capturing packets for identifying application performance using local and remote port mirroring or ERSPAN (Encapsulated Remote SPAN ) for packet captures.</b>	
	<b>Switch should support for Management and monitoring status using different type of Industry standard NMS using: SNMP V3 with encryption</b>	
	<b>The switch OS should support programmability through gRPC/REST APIs and Python scripting or equivalent.</b>	
	<b>Flow telemetry should support hardware acceleration so that it is not impacting CPU performance</b>	
	<b>The Switch should support NTP</b>	
<b>5</b>	<b>Resiliency and high availability</b>	
<b>S.No</b>	<b>Specification</b>	<b>Compliance Yes/No</b>
	<b>The Switch should support IEEE 802.1w Rapid Convergence Spanning Tree Protocol</b>	
	<b>The Switch should support IEEE 802.1s Multiple Spanning Tree</b>	
	<b>The Switch should support Virtual Router Redundancy Protocol (VRRP)</b>	
	<b>The Switch should support Bidirectional Forwarding Detection (BFD) to enables link connectivity monitoring and reduces network convergence time for OSPF/IS-IS, BGP and VRRP</b>	
<b>6</b>	<b>Layer 2 switching</b>	

	<b>The Switch should support 4000 VLAN</b>	
	<b>Switch should support layer 2 extension over VXLAN across all Data Centre to enable VM mobility &amp; availability</b>	
	<b>The Switch should support IEEE 802.3x Flow Control</b>	
	<b>The Switch should support Ethernet Link Aggregation</b>	
	<b>The Switch should support IEEE 802.3ad Link Aggregation of Supports up to 48 LAGs, with up to 16 members per LAG</b>	
	<b>The Switch should support STP (IEEE 802.1D), Rapid STP (RSTP, IEEE 802.1w), and Multiple STP (MSTP, IEEE 802.1s)</b>	
	<b>The Switch should support IGMP Snooping provide Layer 2 optimisation of multicast traffic</b>	
<b>7</b>	<b>Layer 3 services</b>	
	<b>The Switch should support Address Resolution Protocol (ARP)</b>	
	<b>The Switch should determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP</b>	
	<b>Switch should support DHCP snooping and ARP Inspection to ensure host integrity by preventing malicious users from exploiting the insecure nature of the ARP protocol</b>	
<b>8</b>	<b>Security</b>	
	<b>The Switch should support RADIUS/TACACS+</b>	
	<b>The Switch should support Secure shell encrypt all transmitted data for secure remote CLI access over IP networks</b>	
	<b>The Switch should support IEEE 802.1X and RADIUS network logins</b>	
	<b>The Switch should support allow access only to specified MAC addresses, which can be learned or specified by the administrator</b>	
<b>9</b>	<b>Certification</b>	
<b>S.No</b>	<b>Specification</b>	<b>Compliance Yes/No</b>
	<b>The switch should have UL 60950-1, CAN/CSA C22.2 No 60950-1, IEC 60950-1, EN 60950-1, Emissions : FCC Part 15 (CFR 47) CLASS A, ICES-003 CLASS A, VCCI CLASS A, CISPR 22/32 CLASS A, EN 55022/55032 CLASS A EN 61000-3-2, EN 61000-3-3 or Equivalant</b>	
<b>10</b>	<b>MISCELLANEOUS POINTS</b>	
	<b>Console cable and power cable (As per Indian standards) as per customer requirement to be provided. All Cables</b>	



	<b>shall be factory-terminated.</b>	
	<b>All the proposed switches and features must support day 1 without add on any license</b>	
	<b>The Switches should have 5-year warranty with 24x7 support directly from OEM and advance replacement.</b>	
	<b>All switches and Transceiver module should be from same OEM.</b>	
	<b>Manufacturers Authorization Letter Specific to this tender must be submitted. Tender submitted without MAF will be rejected.</b>	

### 1.1 Item No. 9 & 40 of BoQ

Boarder leaf Switches for DC & DR

S.No	Specification	Compliance Yes/No
<b>1</b>	<b>Architecture</b>	
a	The switch should have at least 48 x 10/25GbE and 6 x 100GbE fixed ports, supplied with SR Optics 2x100G, 24x25G, 3x10G for BOQ Item no. 8 of DC	
b	The switch should have at least 48 x 10/25GbE and 6 x 100GbE fixed ports, supplied with SR Optics, 2x100G, 6x25G, 5x10G, 6x1G for BoQ Item no. 40 of DR	
	The Switch should support,1 RJ-45 serial console port,1 RJ-45 management port and 1 USB port and min 1GB/64GB flash/SSD, 8GB/32GB SDRAM and 32MB Packet buffer.	
	The switch should support hot-swappable dual power supply and four fan tray	
	At least 3.64 Tbps switching capacity and 1200/2000 million pps Throughput	
	The switch should support MAC Address table size of 90K entries	
	Switch should at least support 130K routing entries IPv4, 30k entries (IPv6)	
<b>2</b>	<b>Quality of Service (QoS)</b>	
S.No	Specification	Compliance Yes/No
	<b>Switch system should support 802.1P classification and marking of packet using COS &amp; DSCP</b>	
	<b>The proposed switch should support Strict priority (SP) queuing and Deficit Weighted Round Robin (DWRR) / WRR</b>	
<b>3</b>	<b>Layer 3 and Data Centre optimized</b>	
	<b>The Switch should have cut-through and nonblocking architecture</b>	
	<b>The Switch should have Advanced modular operating system</b>	

	<b>The Switch should support for IEEE 802.1Qbb Priority Flow Control (PFC), Data Centre Bridging Exchange (DCBX), IEEE 802.1Qaz Enhanced Transmission Selection (ETS), Explicit Congestion Notification (ECN) support RoCE environments</b>	
	<b>The Switch should support Jumbo frames sizes of up to 9K bytes</b>	
	<b>The Switch should support VXLAN and EVPN (MP-BGP)</b>	
	<b>The switch should support BGP EVPN Route Type 2 and Route Type 5 for the overlay control plane</b>	
	<b>The Switch should have dynamic Protocol and must support Policy-based routing, ECMP, VRRP, OSPF/ IS-IS and IPv6, BGP and MP BGP</b>	
	<b>The proposed switch should support min 256 VRFs</b>	
	<b>The Switch should support 7K Multicast Routing and PIM Dense and Sparse modes</b>	
	<b>Proposed Switches must support Micro-Segmentation architecture to optimise the east - west traffic flow inside the data centre</b>	
	<b>The proposed switches in the DCN fabric should support a Stateful/Stateless firewall natively from day 1 to achieve the Micro-segmentation for east-west traffic.</b>	
<b>4</b>	<b>Manageability</b>	
	<b>The Switch should support ingress and egress port monitoring and traceroute and ping</b>	
	<b>Switch should provide remote login for administration using SSH v2</b>	
	<b>The Switch should support multiple configuration files to be stored to a flash image</b>	
	<b>The Switch should support sFlow (RFC 3176)</b>	
	<b>The Switch should support SNMP v1, v2c and v3</b>	
	<b>Switch should support for capturing packets for identifying application performance using local and remote port mirroring or ERSPAN (Encapsulated Remote SPAN ) for packet captures.</b>	
	<b>Switch should support for Management and monitoring status using different type of Industry standard NMS using: SNMP V3 with encryption</b>	
<b>S.No</b>	<b>Specification</b>	<b>Compliance Yes/No</b>
	<b>The switch OS should support programmability through gRPC/REST APIs and Python scripting or equivalent.</b>	
	<b>Flow telemetry should support hardware acceleration so that it is not impacting CPU performance</b>	
	<b>The Switch should support NTP</b>	
<b>5</b>	<b>Resiliency and high availability</b>	
	<b>The Switch should support IEEE 802.1w Rapid</b>	

	<b>Convergence Spanning Tree Protocol</b>	
	<b>The Switch should support IEEE 802.1s Multiple Spanning Tree</b>	
	<b>The Switch should support Virtual Router Redundancy Protocol (VRRP)</b>	
	<b>The Switch should support Bidirectional Forwarding Detection (BFD) to enables link connectivity monitoring and reduces network convergence time for OSPF/IS-IS, BGP and VRRP</b>	
<b>6</b>	<b>Layer 2 switching</b>	
	<b>The Switch should support 4000 VLAN</b>	
	<b>Switch should support layer 2 extension over VXLAN across all Data Centre to enable VM mobility &amp; availability</b>	
	<b>The Switch should support IEEE 802.3x Flow Control</b>	
	<b>The Switch should support Ethernet Link Aggregation</b>	
	<b>The Switch should support IEEE 802.3ad Link Aggregation of Supports up to 48 LAGs, with up to 16 members per LAG</b>	
	<b>The Switch should support STP (IEEE 802.1D), Rapid STP (RSTP, IEEE 802.1w), and Multiple STP (MSTP, IEEE 802.1s)</b>	
	<b>The Switch should support IGMP Snooping provide Layer 2 optimisation of multicast traffic</b>	
<b>7</b>	<b>Layer 3 services</b>	
	<b>The Switch should support Address Resolution Protocol (ARP)</b>	
	<b>The Switch should determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP</b>	
	<b>Switch should support DHCP snooping and ARP Inspection to ensure host integrity by preventing malicious users from exploiting the insecure nature of the ARP protocol</b>	
<b>8</b>	<b>Security</b>	
	<b>The Switch should support RADIUS/TACACS+</b>	
	<b>The Switch should support Secure shell encrypt all transmitted data for secure remote CLI access over IP networks</b>	
<b>S.No</b>	<b>Specification</b>	<b>Compliance Yes/No</b>
	<b>The Switch should support IEEE 802.1X and RADIUS network logins</b>	
	<b>The Switch should support allow access only to specified MAC addresses, which can be learned or specified by the</b>	

	<b>administrator</b>	
<b>9</b>	<b>Certification</b>	
	<b>The switch should have UL 60950-1, CAN/CSA C22.2 No 60950-1, IEC 60950-1, EN 60950-1, Emissions : FCC Part 15 (CFR 47) CLASS A, ICES-003 CLASS A, VCCI CLASS A, CISPR 22/32 CLASS A, EN 55022/55032 CLASS A EN 61000-3-2, EN 61000-3-3 or Equivalant</b>	
<b>10</b>	<b>MISCELLANEOUS POINTS</b>	
	<b>Console cable and power cable (As per Indian standards) as per customer requirement to be provided. All Cables shall be factory-terminated.</b>	
	<b>All the proposed switches and features must support day 1 without addon any license</b>	
	<b>The Switches should have 5-year warranty with 24x7 support directly from OEM and advance replacement.</b>	
	<b>All switches and Transceiver module should be from same OEM.</b>	
	<b>Manufacturers Authorization Letter Specific to this tender must be submitted. Tender submitted without MAF will be rejected.</b>	

### 1.1 Item No. 10 & 41 of BoQ

WAN Access / BB Switches for DC and DR

<b>S.No</b>	<b>Specification</b>	<b>Compliance (Yes/No)</b>
<b>1</b>	<b>Architecture</b>	
	The switch should have Data Centre grade with least 24 nos. 1G/10G SFP+ ports 4 x 40G/100G Ports, loaded with 10x10G and 10x1G SR Optics	
	The Switch should support,1 RJ-45 serial console port,1 RJ-45 management port and 1 USB port	
	The switch should have 1GB/32GB flash/SSD, 4GB/16GB SDRAM, 12MB/32MB packet buffer size	
	At least 960Gbps switching capacity and up to 714 million pps	
	The switch shall have switching throughput	
	MAC Address table size of 130K entries, at least support 16K IPv4 and 8K IPv6 routing entries	
S.No	Specification	Compliance (Yes/No)
2	Resiliency, High availability, Data Centre and Optimization features	
	The Switch should be distributed and redundant architecture by deploying two switches with each switch maintaining independent control and synchronized.	

	OR The Switch should be deployed in HA with Active/Active mode	
	The connected servers or switches should be attached using standard LACP for automatic load balancing and high availability.	
	The Switch should have Internal redundant and hot-pluggable power supplies and dual fan trays	
	The Switch should support Jumbo frames sizes of up to 9,000 bytes	
	The Switch should support VXLAN Layer 2 and Layer 3 gateway support	
	The Switch should support IEEE 802.1w Rapid Convergence Spanning Tree Protocol	
	The Switch should support IEEE 802.1s Multiple Spanning Tree	
	The Switch should support Device Link Detection Protocol (DLDP)/UDLD	
3	Layer 2 switching	
	The Switch should support All Layer 2 Feature	
	The Switch should support Address Resolution Protocol (ARP) and supports static, dynamic, and reverse ARP and ARP proxy	
	The Switch should support IEEE 802.3x Flow Control	
	The Switch should support Ethernet Link Aggregation	
	The Switch should support IEEE 802.3ad Link Aggregation Supports up to 24 LAGs, with up to 8 members per LAG with a user-selectable L1- 4 hashing algorithm	
	The Switch should support STP (IEEE 802.1D), Rapid STP (RSTP, IEEE 802.1w), and Multiple STP (MSTP, IEEE 802.1s)	
	The Switch should support 1000 Active VLANs based on port, MAC address, IPv4 subnet, protocol, and guest VLAN; supports VLAN mapping	
	The Switch should support for IGMP Snooping	
	The Switch should support DHCP support at Layer 2	
4	Layer 3 routing	
	The Switch should support Virtual Router Redundancy Protocol (VRRP) and VRRP Extended	
	The Switch should support Policy-based routing	

	The Switch should support Equal-Cost Multipath (ECMP)	
	The Switch should support static routes, RIPv2, OSPF/IS-IS BGP.	
	The Switch should support Static IPv6 routing	
S.No	Specification	Compliance (Yes/No)
5	Management	
	The Switch should support Multiple configuration files and stores easily to the flash image	
	The Switch should support SNMPv1, v2c, and v3	
	The Switch should support Remote configuration and management	
	The Switch should support sFlow (RFC 3176)	
	The Switch should support Telnet/ SSHv2, CLI	
	The Switch should support Dual flash images	
	The Switch should support NTP/SNTP	
6	Security	
	Switch should support Access control list (ACL) both IPv4 and IPv6 and Port Security	
	The Switch should support RADIUS/TACACS+	
	The Switch should support IEEE 802.1X and RADIUS network logins	
7	Environmental feature and Certification	
	The switch shall support operating temperature of 0°C to 45°C	
	The switch shall support relative humidity 10% to 90% non-condensing	
	The switch shall support ROHS Compliance	
	Safety: UL 60950-1; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1 Emissions: VCCI Class A; EN 55022/55032 Class A; ICES-003 Class A; AS/NZS CISPR 22/32 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; CISPR 22/32 Class A; CNS 13438; or Equivalent	

7	MISCELLANEOUS POINTS	
	Console cable and power cable (As per Indian standards) as per customer requirement to be provided. All Cables shall be factory-terminated.	
	All the proposed switches and features must support day 1 without add on any license	
	The Switches should have 5-year warranty with 24x7 support directly from OEM and advance replacement.	
	All the DC switches, Layer 2 switches and Transceiver module should be from same OEM.	
	Manufacturers Authorization Letter Specific to this tender must be submitted. Tender submitted without MAF will be rejected.	

### 1.1 Item No. 11 & 42 of BoQ DMZ

Switch for DC and DR

S.No	Specification	Compliance (Yes/No)
1	<b>Architecture</b>	
	The switch should have Data Center grade with least 24 nos. 1G/10G SFP+ ports 4 x 40G/100G Ports, loaded with 10x10G and 10x1G SR Optics	
	The Switch should support,1 RJ-45 serial console port,1 RJ-45 management port and 1 USB port	
	The switch should have 1GB/32GB flash/SSD, 4GB/16GB SDRAM, 12MB/32MB packet buffer size	
	At least 960Gbps switching capacity and upto 714 million pps	
	The switch shall have switching throughput	
	MAC Address table size of 130K entries, at least support 16K IPv4 and 8K IPv6 routing entries	
2	<b>Resiliency, High availability, Data Centre and Optimization features</b>	
	The Switch should in distributed and redundant architecture by deploying two switches with each switch maintaining independent control and synchronized. OR. The Switch shall be deployed in Active-Active HA mode.	
	The connected servers or switches should be attached using standard LACP for automatic load balancing and high availability.	
	The Switch should have Internal redundant and hot-pluggable power supplies and dual fan trays	
	The Switch should support Jumbo frames sizes of up to 9,000 bytes	
	The Switch should support VXLAN Layer 2 and Layer 3 gateway support	

	The Switch should support IEEE 802.1w Rapid Convergence Spanning Tree Protocol	
	The Switch should support IEEE 802.1s Multiple Spanning Tree	
	The Switch should support Device Link Detection Protocol (DLDP)/UDLD	
<b>3</b>	<b>Layer 2 switching</b>	
	The Switch should support All Layer 2 Feature	
	The Switch should support Address Resolution Protocol (ARP) and supports static, dynamic, and reverse ARP and ARP proxy	
	The Switch should support IEEE 802.3x Flow Control	
	The Switch should support Ethernet Link Aggregation	
S.No	Specification	Compliance (Yes/No)
	The Switch should support IEEE 802.3ad Link Aggregation Supports up to 24 LAGs, with up to 8 members per LAG with a user-selectable L1- 4 hashing algorithm	
	The Switch should support STP (IEEE 802.1D), Rapid STP (RSTP, IEEE 802.1w), and Multiple STP (MSTP, IEEE 802.1s)	
	The Switch should support 1000 Active VLANs based on port, MAC address, IPv4 subnet, protocol, and guest VLAN; supports VLAN mapping	
	The Switch should support for IGMP Snooping	
	The Switch should support DHCP support at Layer 2	
<b>4</b>	<b>Layer 3 routing</b>	
	The Switch should support Virtual Router Redundancy Protocol (VRRP) and VRRP Extended	
	The Switch should support Policy-based routing	
	The Switch should support Equal-Cost Multipath (ECMP)	
	The Switch should support static routes, RIPv2, OSPF/IS-IS BGP.	
	The Switch should support Static IPv6 routing	
<b>5</b>	<b>Management</b>	
	The Switch should support Multiple configuration files and stores easily to the flash image	
	The Switch should support SNMPv1, v2c, and v3	
	The Switch should support Remote configuration and management	
	The Switch should support sFlow (RFC 3176)	
	The Switch should support Telnet/ SSHv2, CLI	
	The Switch should support Dual flash images	
	The Switch should support NTP/SNTP	
<b>6</b>	<b>Security</b>	
	Switch should support Access control list (ACL) both IPv4 and IPv6 and Port Security	
	The Switch should support RADIUS/TACACS+	
	The Switch should support IEEE 802.1X and RADIUS	



	network logins	
7	Environmental feature and Certification	
	The switch shall support operating temperature of 0°C to 45°C	
	The switch shall support relative humidity 10% to 90% non-condensing	
	The switch shall support ROHS Compliance	
S.No	Specification	Compliance (Yes/No)
	Safety: UL 60950-1; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; EN 60950-1; AS/NZS 60950-1 Emissions: VCCI Class A; EN 55022/55032 Class A; ICES-003 Class A; AS/NZS CISPR 22/32 Class A; EN 61000-3-2; EN 61000-3-3; FCC (CFR 47, Part 15) Class A; CISPR 22/32 Class A; CNS 13438; or Equivalent	
7	MISCELLANEOUS POINTS	
	Console cable and power cable (As per Indian standards) as per customer requirement to be provided. All Cables shall be factory-terminated.	
	All the proposed switches and features must support day 1 without add on any license	
	The Switches should have 5-year warranty with 24x7 support directly from OEM and advance replacement.	
	All the DC switches, Layer 2 switches and Transceiver module should be from same OEM.	
	Manufacturers Authorization Letter Specific to this tender must be submitted. Tender submitted without MAF will be rejected.	

### Item No. 12 & 43 of BoQ NOC LAN

#### Switches for DC and DR

Sr. No	Specifications	Compliance (Yes/No)
	<b>48 Port for DC</b>	
1	Switch must have 48 Gig Ethernet ports and 2 x 10G SFP+ for uplink on single chassis loaded with 2x10G Optics	
2	Switching capacity should be equal to greater than 100 Gbps.	
	<b>24 Port for DR</b>	
1	Switch must have 24 Gig Ethernet ports and 2 x 10G SFP+ for uplink on single chassis, loaded with 2x10G optics	
2	Switching capacity should be equal to greater than 58 Gbps.	
3	Mac address table size should be equal to or greater than 32000.	

4	Switch must be supplied with compatible Trans receiver for Fiber ports.	
5	Switch must have redundant Power Supply.	
6	Switch should have USB/Ethernet management interfaces.	
Sr. No	Specifications	Compliance (Yes/No)
7	Switch should have minimum Flash memory 128MB/16GB	
8	Switch should have minimum DRAM 512MB/8GB	
9	Switch should be managed in an IPv6 network(IPv6 Device IP)	
10	Switch should support Dual stack (IPv4 and IPv6) transitions from IPv4 to IPv6, support connectivity for both protocols	
11	Switches should support Spanning Tree Protocol (STP)	
12	Switch should support link aggregation control protocol (LACP) and port trunking.	
13	Switch should support VLAN support and tagging support IEEE 802.1Q.	
14	Switch should support Simple Network Management Protocol (SNMPv2 and SNMPv3).	
15	Implement Access Lists on the switch to ensure SNMP access only to the SNMP manager or the NMS workstation.	
16	Implementation of multiple Privilege Levels should be supported.	
17	Switch should Support for authentication, authorization, and accounting (AAA) using RADIUS and TACACS+.	
18	Switch should support TFTP/ SFTP.	
19	Switch should support Extensive debugging capabilities to assist in hardware/Configuration problem resolution, should supports ping and traceroute for both IPv4 and IPv6.	
20	Switch should support integration for Network Time Protocol (NTP), Syslog	
21	The Switch must be able to generate Syslog Messages with timestamp, which can be exported to a Syslog Server.	
22	The Switch shall integrate with centralized network management software.	
23	The Switches must be supplied with Indian Standard Power cables.	
24	The switch shall have management security features like SSHv2 / Secure copy, encrypted user passwords, and authentication via AAA and RADIUS / TACACS+ to prevent unauthorized management access"	
25	Console cable and power cable (As per Indian standards) as per customer requirement to be provided. All Cables shall be factory-terminated.	
26	All the proposed switches and features must support day 1 without add on any license	
27	The Switches should have 5-year warranty with 24x7 support directly from OEM and advance replacement.	

28	All the DC switches, Layer 2 switches and Transceiver module should be from same OEM.	
29	Manufacturers Authorization Letter Specific to this tender must be submitted. Tender submitted without MAF will be rejected.	

**Item No. 13 & 44 of BoQ Management**

LAN Switch for DC and DR

Sr. No	Specifications	Compliance (Yes/No)
1	Switch must have 48 Gig Ethernet ports and 2 x 10G SFP+ for uplink on single chassis loaded with 2x10G Optics	
2	Switching capacity should be equal to greater than 100 Gbps.	
3	Mac address table size should be equal to or greater than 32000.	
4	Switch must be supplied with compatible Trans receiver for Fiber ports.	
5	Switch must have redundant Power Supply.	
6	Switch should have USB/Ethernet management interfaces.	
7	Switch should have minimum Flash memory 128MB/16GB	
8	Switch should have minimum DRAM 512MB/8GB	
9	Switch should be managed in an IPv6 network(IPv6 Device IP)	
10	Switch should support Dual stack (IPv4 and IPv6) transitions from IPv4 to IPv6, support connectivity for both protocols	
11	Switches should support Spanning Tree Protocol (STP)	
12	Switch should support link aggregation control protocol (LACP) and port trunking.	
13	Switch should support VLAN support and tagging support IEEE 802.1Q.	
14	Switch should support Simple Network Management Protocol (SNMPv2 and SNMPv3).	
15	Implement Access Lists on the switch to ensure SNMP access only to the SNMP manager or the NMS workstation.	
16	Implementation of multiple Privilege Levels should be supported.	
17	Switch should Support for authentication, authorization, and accounting (AAA) using RADIUS and TACACS+.	
18	Switch should support TFTP/ SFTP.	
19	Switch should support Extensive debugging capabilities to assist in hardware/Configuration problem resolution, should supports ping and traceroute for both IPv4 and IPv6.	
20	Switch should support integration for Network Time Protocol (NTP), Syslog	
21	The Switch must be able to generate Syslog Messages with timestamp, which can be exported to a Syslog Server.	

22	The Switch shall integrate with centralized network management software.	
23	The Switches must be supplied with Indian Standard Power cables.	
Sr. No	Specifications	Compliance (Yes/No)
24	The switch shall have management security features like SSHv2 / Secure copy, encrypted user passwords, and authentication via AAA and RADIUS / TACACS+ to prevent unauthorized management access"	
25	Console cable and power cable (As per Indian standards) as per customer requirement to be provided. All Cables shall be factory-terminated.	
26	All the proposed switches and features must support day 1 without add on any license	
27	The Switches should have 5-year warranty with 24x7 support directly from OEM and advance replacement.	
28	All the DC switches, Layer 2 switches and Transceiver module should be from same OEM.	
29	Manufacturers Authorization Letter Specific to this tender must be submitted. Tender submitted without MAF will be rejected.	

**Item No. 14 & 45 of BoQ****DCN Fabric Manager at DC and DR**

S/N	Specifications	Compliance (Yes/No)
1	Solution should support orchestration for the Data Centre/DR that automate networking tasks, including provisioning of VLANs, OSPF & BGP EVPN with VXLAN on Spine & Leaf topologies within the Data Centre/DR	
2	Should allow workload mobility anywhere in the DC/DR, across the Data Centre sites and shall be supplied with all licenses required for managing the network components in the DC/DR	
3	Solution should have both interactive and automated workflows based architecture to allow an administrator to easily take control of their environment. Fabric manager should support Automated service provisioning for VXLAN L2/L3 services, underlay and overlay network fabric OR Solution should support end-to-end change-management workflows, centralized fabric management and upgrades, normalized segmentation, and security policies across the data center, and enterprise branch and campus networks. Fabric manager should support automated, policy-based, systems-management approach.	

S/N	Specifications	Compliance (Yes/No)
4	<p>Solution should support deep IT ecosystem integrations that enable administrator to manage, provision, and visualize their entire end-to-end network. The Solution should support Visual network representation of underlay and overlay topologies with correlations for a holistic view of the entire network</p> <p>OR</p> <p>Solution should support deep IT ecosystem integrations that enable administrator to manage, provision, and visualize their entire end-to-end network. The Solution should support Visual network representation, underlay and overlay information with topology view of the entire network</p>	
5	Solution should have API based integration with different tool such as reputed hypervisor clusters or API based integration options. Solution should allow automated fabric provisioning, end-to-end network and host visibility.	
6	Fabric solution must not be based on Proprietary & Closed technology (i.e. Vendor specific).	
7	Each Site (DC & DR) should have its own Fabric Manager / SDN Controller (Hardware/software with required license based on the number network devices) provided in High availability mode from day one. The failure of a Fabric Manager / SDN controller in one site (say DC) should not affect the Fabric Manager / SDN controller running in other site (say DR Site). Also network must be able to operate and run without interruption, in case the Both Fabric/SDN Controller is not present for any reason.	
8	Solution should support initial fabric operations via set of workflow automations using guided setup or API. Solution should support deployment of Leaf-Spine topology, Network wide Underlay configuration of BGP or OSPF, Firmware and system services, DNS/NTP management, Link aggregation and VLAN Groups orchestration, Fabric-wide Virtual Routing & Forwarding (VRF) management and Fabric wide EVPN management/VXLAN Management	
9	The Solution should support micro segmentation for enhanced east-west traffic security control and Solution must act as a Stateful/State-less distributed capability. Fabric must support PBR or Service chain configuration	

	Fabric Manager / SDN Controller must support Role Based Access Control for the Management perspective.	
	All infrastructure required by fabric Manager to support the listed features and scale, should be provided by the bidder day one	
<b>S/N</b>	<b>Specifications</b>	<b>Compliance (Yes/No)</b>
<b>10</b>	Solution should support automations for completing many day-to-day operations within the DC fabric, including standard configuration tasks like Adding and deleting VLANs, assigning VLANs to ports, Creating and deleting Link Aggregation Groups (LAG), Toggling a switch Port admin state, Enabling/disabling LLDP, Applying a QoS profile for LAN/SAN traffic	
<b>11</b>	Fabric manager / SDN controller can be VM or HW Appliance.	

**1.1 Item No. 19 & 50 of BoQ****400TB SAN Storage for DC and 200TB SAN Storage for DR with SR Optics**

<b>SL no</b>	<b>Features</b>	<b>Specifications</b>	<b>Complied (Yes/No)</b>
<b>1</b>	<b>Storage Quality Certification</b>	1. OEM should have deployed at least 3 Enterprise class storage solutions in Government / Banking / PSU / Corporate Sector during the last three years in India. A copy of project completion report / Work order needs to be submitted in the technical bid.	
		2. Proposed Enterprise class storage should be latest model of the family/series, and also the OEM should have a good product / support roadmap for the offered product.	
		3. Product brochures or any other product related literature should be able to clearly support the technical specifications and requirements of this RFP and this has to be submitted.	

		4. OEM should provide a declaration letter along with a copy of their official sizing tool output confirming the proposed solution will deliver the required performance parameters.	
2	Storage Controller	1. The Storage system offered must be scale-out system with SAN (block) workloads. The storage should have symmetric/asymmetric active-active architecture across controllers	
		2. Storage system must be offered in a No-Single- Point of Failure offering up to six 9s of availability guarantee with minimum 2 Nodes/Controllers and Scale-Out to minimum 4 Nodes.	
3	Cache/Memory Support	The system should have a minimum of 1.0 TB cache and scalable to 3 TB across controllers with an ability to protect data on cache if there is a controller failure or power outage.	
4	Drive Support	The system must support NVMe SSD drives, it should support end to end NVMe interface protocol capability. The system must support a minimum of 240 NVMe disks across controllers for scalability purpose.	
5	Disk Drive Protection	The proposed system should offer minimum dual drive failure protection for better resiliency and performance.	
6	Capacity for DC SAN	The system should be configured with 400TB usable capacity using NVMe TLC SSD Drives with RAID 6/Dual drive failure protection	
7	Capacity for DR SAN	The system should be configured with 200TB usable capacity using NVMe TLC SSD Drives with RAID 6/Dual drive failure protection	
8	Performance for DC SAN	Minimum 5.5 Lakh IOPS with <1ms latency for 50:50 R/W ratio, 8KB block size, 100% random workload, without considering the effect of cache for reads and writes. OEM signed letter with sizing justification to be provided by bidder	

9	<b>Performance for DR SAN</b>	Minimum 4 Lakh IOPS with <1ms latency for 50:50 R/W ratio, 8KB block size, 100% random workload, without considering the effect of cache for reads and writes. OEM signed letter with sizing justification to be provided by bidder	
10	<b>Protocols</b>	The storage should be configured natively with FC, NVMe-oF, NVMe/TCP, iSCSI protocols for use with different applications.	
11	<b>Front-End and Backend connectivity</b>	The proposed storage system should have minimum 8 x 32GbE FC + 8X 25/10G SFP+ front end ports available across dual controllers.	
12	<b>Investment Protection</b>	1. The storage offered should be a true scale-out system that allows intermixing of controllers across generations within the same system and scalable to a minimum of 4 controllers for maximum investment protection.	
13	<b>Storage General Features</b>	1. Ability to expand LUNS/Volumes on the storage online and instantly.	
		2. Quality of Service feature configured for both min and max limit at individual volume/LUN. The QoS should offer capability to maintain IOPs per GB allowing to increase the IOPs as LUN/Volume size is increased. Any additional license should be configured for the same if required.	
		3. Redundant hot swappable components like controllers, disks, power supplies, fans etc and allow re-usage of Disk Shelves with higher models of the same product line.	
		4. The proposed system should offer centralized, application-consistent data protection supported for various applications.	



		5. The proposed storage should enable and integrate with leading server virtualization technologies in the market including open source virtualisation technologies. The proposed array should be able to present both virtual storage pool and traditional LUN's.	
		6. The storage system should be capable of providing multi-pathing software with failover and load balancing functionality .	
		7. The proposed storage should provide both in-line and post process efficiency features such as Compression, De-Duplication.	
		8. The Storage array should be offered with Synchronous, Asynchronous replication feature & 3DC Zero Data Loss protection between the DC, DR and Near DR	
		9. The proposed system shall have Container Storage Interface (CSI) driver support	
<b>14</b>	<b>Data Protection</b>	a. The proposed system/solution should offer incremental replication capabilities. The WAN replication should be secured by end-to-end encryption and bandwidth optimization supported natively. All the necessary licenses should be provided from day 1.	
		b. The proposed system should offer solution for zero RPO and near zero RTO for high data availability and fast data replication for business-critical applications in both virtual and physical environments such that the services should continue operating even when there is a complete site failure.	

		c. The system offered should provide the ability to recover databases, and complete volumes instantaneously from the snapshot copies.	
		d. The proposed storage should offer minimum 1000 point-in-time snapshots per volume/LUN in such a way that the snapshots should not consume extra space at the time of creation. The license for entire usable capacity to be included.	
		e. The Proposed Storage system should have native GUI to monitor & perform operations on data protection jobs	
15	<b>Security and Encryption</b>	The proposed storage array must support data-at-rest encryption in compliance with FIPS 140-2 certification managed by On-board Key Manager or External Key Manager using a cryptographic security module.	
		Storage shall provide the capability to sanitize disk to ensure that data can be made unreadable while replacing the Disk Drives in the array.	
		The storage system should support the functionality to enable administrators in limiting or restricting users' administrative access granted for their defined role.	
		Proposed storage should support block level data de- duplication, compression for all kinds of data (structured & unstructured) and Thin provisioning .	
16	<b>Data Reduction Technology / Storage Efficiency</b>	The Storage Management Software should offer operational simplicity and rich data management functionalities for SAN Storage. It should provide a single dashboard to monitor health, availability, capacity usage, performance, and data protection status of various platforms along with resource planning.	

		The management tool should latest software upgrades, timely system analysis and recommendations to solve any performance issues.	
<b>17</b>	<b>Management</b>		
		The management tool should display system alerts and notifications for proactive management on the dashboard for users to quickly access them and it should provide information about support cases raised on the cluster.	
		The Storage management interface (GUI) should be virtualisation aware and provide end to-end virtual- to-physical mapping of the physical infrastructure using a single console.	
		The offered system should be able to deliver actionable predictive analytics and proactive support through a cloud-based portal and mobile app. It should support automating maintenance task along with upgrades automation and watchlist. It should automate the task of updating the firmware via ansible playbooks.	
		It should support config drift to identify deviations in configurations and configuration drift corrections to help proactively address configuration gaps and anomalies. It should support capacity forecasting with drift chat integration to enable timely support.	

		The offered system should offer capability to find and fix security vulnerabilities and automate risk remediation.	
		The offered system should support single plane of automation that contain automation capabilities with full REST APIs. It should support REST APIs for events, systems and retrieving performance and license details.	
		The storage should enable a lower cost of ownership and ease of setup by reducing the time to deploy and manage the storage.	
18	Automation	The offered storage system support APIs to manage and monitor storage infrastructure. It should support various API categories such as Intelligent provisioning, Data centre management and monitoring, Configuration and admin, Data centre-level Aggregation etc.	
		The offered system should support automation to achieve the key storage outcomes such as cluster setup, Cluster upgrade, Provisioning, Protection and Monitoring and provide easy provisioning for volume and LUN.	
19	Rack Mountable	The storage should be supplied with rack mount kit. All the necessary patch cords (Ethernet and Fiber) shall be provided and installed by the vendor.	
20	Warranty	The Hardware and software quoted should have 5 years onsite comprehensive warranty/support along with upgrades and updates.	

**Backup Device – NL SAS Unit with 100TB storage at DC and Remote location**

S No	Specification	Complied Yes/No
1	Make- To be provided by Bidder	
2	Model Name- To be provided by Bidder	
3	The offered backup device should be fully compatible with the proposed backup software. The technical compatibility matrix establishing this to be attached with technical bid	

4	Offered Disk based backup solution shall be certified to work with leading Backup Applications of vendors including Veritas, Data Protector, Veeam, Commvault, Zerto etc. Device certification/Compatibility matrix with the above software should be attached as part of the technical compliance.	
5	Offered device shall be delivered with a minimum capacity of 100TB of usable capacity after RAID6 using NLSAS drives. In case bidder's solution requires higher capacity then solution has to be sized accordingly and provided to cater to the following backup capacity and retention needs. Storage must be supplied with 100TB usable capacity on dual ported 12Gbps NL-SAS Disk (10TB or higher) with appropriate RAID Group. Daily incremental backup to be retained for 14 days Weekly full backups to be retained for 12 weeks on disk. Weekly and Monthly full backup will also need to be copied to tape for vaulting	
6	Offered device should flexibly provide the following backup target types - VTL or NAS (NFS/SMB)	
9	Offered device shall have integrated de-duplication license & replication license so that only unique data or deduplicated data are transferred to remote / DR location.	
10	Offered device should be supported in source based/target based de- duplication and shall be integrated with the offered backup software.	
11	Offered device shall have Minimum of 2 x 25Gbps SFP IP ports (fibre) & 2 x 16/32Gbps FC ports. Licenses and required SFPs for all ports shall be offered and configured.	
12	The Device should support ISV controlled Data immutability to ensure data retention defined as part of the retention policy to prevent unauthorized deletion of backup sets or objects prior to their expiry date.	
13	Offered disk based backup device should have encryption functionality.	
14	Offered disk based backup device shall also support Secure erase feature for protecting against unauthorized recovery of deleted data.	
15	Offered Device should support enhanced security with dual/multifactor authorization/authentication or dual sign-on requiring the administrator and a second authorized authority such as a security officer to authorize performance of critical functions to protect against malicious attackers.	

16	Offered device shall support rated backup write performance of at- least 25TB/Hr of backup throughput.	
17	Warranty - 5 years 24x7 support	

**Item No. 20 & 51 of BoQ**

48Port, 32Gbps SAN Switches for DC and DR

Sr. No.	Specifications	Compliance
1	The switch should have complete non-blocking architecture with 48 ports in a single domain concurrently active 1. For Data Centre, 32 Gbps full duplex Ports with licenses for 48 ports supplied with SR optics from day 1 2. For DR Centre, 32 Gbps full duplex Ports with licenses for 24 ports supplied with SR optics from day 1	
2	The switch should support auto-sensing 16 , 32 and 64 Gbps capabilities	
3	The switch should be rack mountable in min 1 RU form factor	
4	All 32 autosensing Fibre Channel ports should be capable of speeds of 16 ,32 Gbps and 64 Gbps with 32 Gbps of dedicated bandwidth for each port.	
5	FC buffer credits available for data frames should be up to min.1000 per port and switch should support aggregate bandwidth of 3Tbs end to end full duplex.	
6	The switch should support non disruptive software upgrade and configuration file installation on newly deployed switches. Additionally, it provides intelligent diagnostics, protocol decoding, network analysis tools for added reliability, faster problem resolution, and reduced service costs.	
7	The switch should protect SAN and End devices from corrupted frames (inbuilt CRC and Slow Drain detection and Mitigation)	
8	The switch must be equipped with congestion control mechanisms such that it is able to throttle back traffic away from a congested link.	

9	The switch must be capable of creating multiple hardware-based isolated Virtual Fabric (ANSI T11) instances. Each Virtual Fabric instance within the switch should be capable of being zoned like a typical SAN and maintains its own fabric services, zoning database, Name Servers and FSPF processes etc. for added scalability and resilience	
10	Switch management, the management software must support both Fabric wide and Device level management without the additional purchase of software.	
11	The switch must be able to load balance traffic through an aggregated link with Source ID and Destination ID. The support for load balancing utilizing the Exchange ID must also be supported.	
12	Offered SAN switch shall support services such as Quality of Service (QoS) to help optimize application performance in consolidated, virtual environments. It should be possible to define high, medium and low priority QOS zones to expedite high-priority traffic	
13	The switch using FSPF protocol, the switch must be able to load balance up to 16 equal cost paths across the SAN network	
14	Switch should provide comprehensive tool set for analyzing, troubleshooting, and debugging storage networks. Power-on self-test (POST) and online diagnostics to proactively monitor system health. Identify the exact path and timing of flows with capabilities such as Fibre Channel traceroute. Capture network traffic using Switched Port Analyzer (SPAN) and Remote SPAN (RSPAN) without any limitation.	

15	The switch should have USB port which should be able to provision the switch in addition to storing log files, firmware images and configuration	
16	The switch should offer fabric wide, per-VSAN role-based authentication, authorization, and accounting (AAA) services using RADIUS, Lightweight Directory Access Protocol (LDAP), Microsoft Active Directory (AD), and TACACS+.	
17	SAN Switch should provide end to end visibility of fibre channel SAN traffic. It should inspect I/O flow to bring out a unified view of the infrastructure irrespective of the architecture or OEM of storage arrays, servers or operating systems.	
18	Switch should provide proactive and predictive troubleshooting and capable of generating automated alarms. Switch should monitor flows between the compute and storage layers, including the read and the write transactions between a host and the backend storage.	

**Item No. 21 & 52 of BoQ**

Backup solution – For Data Centre, 60VM & 4 worker node license and For DR Centre, 5VM license

Sl. No	Feature	Specification	Compliance
1	Licensing	The proposed Backup software must offer instance based licenses with no restrictions on type of arrays (protecting heterogenous storage technologies), front end production capacity or backup to disk target capacity restrictions. Licenses and associated hardware should be supplied for both DC and DR site. The software shall include license as follows: For DC- 60 VMs and 4 worker nodes, for DR- 5 VMs	



2	Reporting Capabilities	The license file should be supplied to protect virtual machines, physical servers, NAS workload, Endpoints and multi cloud workload including all database applications running on these platforms	
3		The proposed backup software should have a native solution to protect VM/Kubernetes/Container workloads; without the need of a 3rd party solution.	
4		Backup software should have Capability to do trend analysis for capacity planning of backup environment, extensive alerting and reporting with pre- configured and customizable formats. Any specialized reporting modules needed must be quoted along with associated hardware to achieve this functionality. All necessary hardware resources required to run this module should be supplied.	
5		Proposed solution should support 24x7 real-time monitoring, with at-a-glance and drill-down views of health, performance and workload of the virtual hosts.	
6		Proposed solution should have security and compliance dashboard inbuilt with the product.	
7		Proposed solution should support automated action for popular alarms (automated or semi-automated), with at-a-glance and drill-down views of health, performance and workload of the virtual hosts.	
8		<b>Software should be able to restore VMs to a cloud service provider from the backup copy.</b>	
9		<b>The solution should not be dependent on NDMP for backups of file shares and should not have any limitation on the number of incremental backups that could be taken post a Full backup.</b>	

10	Software should be able to extend the backup repository to a public cloud service provider by moving older files to any S3 Compatible Object storage	
11	Backup software should have capability to archive data to any cloud service provider. The Software must have capability to restore the data from archive tier, it should not be dependent on cloud vendor.	
12	Backup software should support agentless backups of applications residing in VMs like SQL, Oracle, etc. with non-staged granular recovery of all these applications. It should support crash consistent VM level backup for all other workloads.	
13	The software must has the functionality to backup on-prem data directly into cloud repositories such as AWS S3 or Microsoft Blob.	
14	Proposed backup software should be able to leverage Immutable Cloud based storage like S3-Immutable service to prevent backup copies of data from any corruption or ransomware attacks.	
15	The backup software must have YARA rules defined in the system.	
16	The proposed solution should have on demand scans available for malware attacks.	

17	The backup Software must have inline detection & in guest detection via guest indexing against any malware attacks.	
18	The proposed backup software should have four eyes approval for any backup deletion.	
19	Backup software should be a Hardware Agnostic software and it should support snapshot integration with hypervisors like VMware, Hyper-V, Nutanix AHV, Proxmox and RHEV and support deduplication on any storage target. It should be able to backup data to tapes (like LTO) as well for long term retention.	
20	The proposed backup software should provide Instant recoveries for any backup to Virtual machines of common OEMs. It should also support the Instant VM recovery for any common as well.	
21	Backup software should support file level recovery from any backup of any VM or physical server. It should support a full system recovery in case of a system crash, either on a physical system or virtual machine or as a Cloud Instance (AWS, Azure or Google)	
22	The Proposed backup Software should support Syslog and Service Now integration.	
23	Backup software should support instant database recoveries of MS SQL and Oracle from the backup files.	

24	Backup software should support Multi factor authentication for accessing Backup console and console auto log-off functionality.	
25	Backup software must have a feature of data validation, whereby a workload (VM with OS and application) is powered-on in a sandbox environment and tested for its recoverability.	
26	Recovery verification should automatically boot the server from backup and verify the recoverability of VM image, Guest OS and Application Consistency and then publish automated reports to be used in backup / recovery audits.	
27	Backup software should provide Backup and Replication capabilities in one console only and also allow users to integrate with RBAC capabilities of the hypervisor, so that users can initiate backup and restore only those VMs to which they have access, without	
19	Backup software should be a Hardware Agnostic software and it should support snapshot integration with hypervisors like VMware, Hyper-V, Nutanix AHV, Proxmox and RHEV and support de-duplication on any storage target. It should be able to backup data to tapes (like LTO) as well for long term retention.	
20	The proposed backup software should provide Instant recoveries for any backup to Virtual machines of common OEMs. It should also support the Instant VM recovery for any common as well.	
	Backup software should support file level recovery from any backup of any VM or physical server. It should support a full system recovery in case of a system crash, either on a physical system or virtual machine or as a Cloud Instance	

21	(AWS, Azure or Google)	
22	The Proposed backup Software should support Syslog and Service Now integration.	
23	Backup software should support instant database recoveries of MS SQL and Oracle from the backup files.	
24	Backup software should support Multi factor authentication for accessing Backup console and console auto log-off functionality.	
25	Backup software must have a feature of data validation, whereby a workload (VM with OS and application) is powered-on in a sandbox environment and tested for its recoverability.	
26	Recovery verification should automatically boot the server from backup and verify the recoverability of VM image, Guest OS and Application Consistency and then publish automated reports to be used in backup / recovery audits.	
27	Backup software should provide Backup and Replication capabilities in one console only and also allow users to integrate with RBAC capabilities of the hypervisor, so that users can initiate backup and restore only those VMs to which they have access, without	

		<b>administrator intervention, thereby delivering self serve capabilities.</b>	
<b>28</b>		<b>Proposed backup software should be able to Hardened the Linux Repository. This service will prevent backup copies of data from any corruption or ransomware attacks.</b>	
<b>29</b>		<b>The software should support Group Managed Service Accounts which should have an option to users to allow change passwords after every 30 days and allows for complex password policy.</b>	
<b>30</b>		<b>The proposed backup software should have object storage backup.</b>	
<b>32</b>		<b>Proposed backup software should have the ability to perform staged restores to enable admins to comply to regulations by selectively deleting files / records which should not be restored from the backup copies. This will help in complying to "right to be forgotten" regulations like GDPR, where user data is deleted from restored backup copies in an auditable manner.</b>	
<b>33</b>		<b>Backup software should support instant file share recovery in NAS storages to allow users to access files fast after disaster.</b>	
<b>34</b>		<b>The proposed Backup software must allow to configure the maximum acceptable I/O latency level for production data stores to ensure backup and replication activities do not impact storage</b>	

		<b>Availability to production workloads.</b>	
35		<b>Backup software should provide Recovery of Application Items, File, Folder and Complete VM recovery capabilities from the image level backup within 15Mins RTO.</b>	
36		<b>The software should be Network-efficient, Secure backup data replication with variable-length encryption at the source, along with compression and encryption to ensure that backups are</b>	
		<b>optimized for WAN transmission. This should be ensured with or without need of any other 3rd party WAN Accelerator requirements.</b>	
37		<b>Replication in the software should be a VM level replication and must replicate the VM level data with or without backing it up at the source site. It should also include failover and failback capabilities and should be able to perform automatic acquisition of network addresses at the destination site.</b>	
38		<b>The Proposed solution should support Continuous replication at VM level. The RPO must be less than 5 Seconds and it must deliver Application consistency.</b>	
39		<b>Backup and replication software must deliver maximum investment protection by supporting replication of workloads between dis-similar systems like hyperconverged infrastructure to stand alone servers and storage running similar hypervisors across sites, thereby creating a Disaster recovery environment for</b>	

		<b>production workloads irrespective of the underlying hardware.</b>	
<b>40</b>		<b>Backup software should have ability to backup data from one server platform and restore it to another server platform to eliminate dependence on a particular machine and for disaster recovery purposes. This bare metal recovery capability should be built in for the physical servers and should even work on the dissimilar hardware.</b>	
<b>41</b>		<b>Backup software should have the ability to backing up a Cloud VM running in AWS or Azure and restore it as a valid VM workload back onto a Vmware server farm.</b>	
<b>42</b>		<b>The proposed data protection software should have fully automated disaster recovery plans that are always kept up to date. Orchestrated disaster recovery tests that don't impact production, scheduled or on demand with 1-click</b>	
<b>43</b>		<b>Should be able to publish DR drill reports, DR test reports and DR readiness check reports for audit and compliance purposes.</b>	
<b>44</b>		<b>The proposed data protection solution should Perform zero-impact scheduled or on-demand DR tests, to ensure required recovery time objectives (RTOs) and RPOs can be met</b>	
<b>45</b>		<b>Proposed solution have role base access control on the backup server</b>	



46	<b>Backup software should have the ability to take application consistent backup at granular level for micro-services</b>	
47	<b>Proposed backup software should be scalable to any number of worker nodes</b>	
48	<b>Proposed software should have cloud storage integration</b>	
49	<b>Proposed solution should have dynamic application Discovery</b>	
50	<b>Proposed solution should be capable to take backup on object storage if required</b>	
51	<b>Proposed solution should be having proper GUI and single command installation</b>	
52	<b>Backup software should be in leader's quadrant for atleast last 5 years</b>	

53	<b>Proposed solution should have inbuilt DR capability as well</b>	
54	<b>The proposed solution should support backup, recovery, Disaster recovery and application mobility of container based applications.</b>	
55	<b>Solution should scalable and should have the capability of protecting thousands of containers.</b>	
56	<b>Solution should support various Kubernetes distributions through native API integration.</b>	
57	<b>It should support integration with relational and no-sql databases.</b>	
58	<b>For container workloads the proposed solution should deliver full spectrum consistency, database integration and automatic application discovery.</b>	
59	<b>Solution should support movement of container based workloads between</b>	

		<b>clusters for Test / dev or cluster upgrade purposes.</b>	
<b>60</b>		<b>The solution should support immutable object storage backups, protect backup data from ransomware, human errors and address data governance, and compliance as well</b>	
<b>61</b>		<b>The solution should provide Centralized management for multi-clustered K8s environment, allowing administrators to manage and monitor day to day data management and protection tasks with a single unified management console</b>	
<b>62</b>		<b>The solution should Support OIDC, LDAP, Active Directory, SAML 2.0 &amp; OAuth</b>	
<b>63</b>		<b>Should have Integrations with Kanister/CNCF which enable application-consistent backup on stateful application running on PV/PVC</b>	

**Item No. 22 of BoQ**

Tape library with 2xLTO-9 tape drives for Data Centre

<b>S. No.</b>	<b>Features</b>	<b>Specifications</b>	<b>Compliance (Yes/No)</b>
1	Capacity	Offered Tape Library shall support Native data capacity of 5PB (uncompressed) using LTO-9 Technology.	
2	Tape Drive Architecture	Shall be offered with Minimum of Two LTO-9 FC tape drive. Drive shall support encryption Shall be offered with 40 Cartridge slots and shall be scalable to 280 slots. Offered LTO-9 drive in the Library shall conform to the Data rate matching technique for higher reliability. Tape Drive Architecture in the Library shall conform to the INCITS T10 standard ADI Protocol or newer standards.	

3	Scalability	Tape Library shall be scalable to minimum of 5 number of LTO-9 drives	
4	Speed	Offered LTO-9 drive shall support 300MB/sec in Native mode and a compressed speed	
5	Connectivity	Offered Tape Library shall provide native FC connectivity to SAN switches.	
6	Partitioning	Offered tape library shall have flexibility to configure each offered drive into a separate	
		partition. Offered tape library shall have support for 21 partition when fully populated	
7	<b>Encryption device</b>	Offered Library shall be provided with a hardware device like USB key or other separate mechanism to keep all the encrypted keys in a redundant fashion.	
8	<b>Management</b>	Tape Library shall provide web based remote management.	
9	<b>Barcode Reader and Mail slots</b>	1. Tape library shall support Barcode reader and mail slot.	
		2. Tape Library shall be offered with 5 mail slots and shall be scalable to 30 slots when fully populated.	
		1. Tape Library shall have GUI Panel	
10	<b>Other Features</b>		
		2. Shall be rack mountable.	

		3. Should have redundant power supply	
		4. Tape Library shall be supplied with software which can predict and prevent failures through early warning and shall also suggest the required service action.	
		5. Tape Library shall have a mechanism to hold persistent history and intelligent analysis of events and logs for easy troubleshooting	
		Tape Library shall provide remote monitoring capability, hot swap tape drives and redundant hot swap power supplies.	
		The proposed appliance should be hardware compatible with various storage arrays of OEMs like Hitachi, Dell, HPE etc. and SAN switches of various industry leading OEMs like HPE, Brocade, Cisco etc.	
		Tape library should be provided with Analytics software that provide: a) Status information on the drive and system b) System configuration operations and reporting c) System error and status logs d) Library and drive firmware upgrade capabilities e) Diagnostic tests and information f) Cartridge movement for maintenance and management purposes g) Cleaning cartridge support h) Security and access control i) IPv6 and IPv4 network protocol support Any other software required to manage the tape library shall be included as part of the solution with required licenses.	
11	Warranty	5 years support including updates and upgrades	

**1.1 Item No. 23 & 57 of BoQ**

Backup Appliance – NL SAS Unit with 100TB storage at DC and Remote location

S No	Specification	Complied Yes/No
1	Make- To be provided by Bidder	
2	Model Name- To be provided by Bidder	

3	The offered backup appliance should be certified for the proposed backup software. The technical compatibility matrix establishing this to be attached with technical bid	
4	Offered Disk based backup solution should be a purpose built backup appliance and shall be certified to work with leading Backup Applications vendors including Veritas, Data Protector, Veeam, Commvault, Zerto etc. Device Certification / Compatibility matrix with the above ISV software should be attached as part of the technical compliance.	
5	Offered device shall be delivered with a minimum capacity of 100TB of usable capacity after RAID6/Tripplle parity using NLSAS drives. In case bidder's solution requires higher capacity then solution has to be sized accordingly and provided to cater to the following backup capacity and retention needs. Storage must be supplied with 100TB usable capacity on dual ported 12Gbps NL-SAS Disk ( 10TB or higher) with appropriate RAID Group giving 3 disks failure per RAID group or additional 10% drive failure, minimum 2 disks failure per RAID group has to be offered. Daily incremental backup to be retained for 14 days Weekly full backups to be retained for 12 weeks on disk. Weekly and Monthly full backup will also need to be copied to tape for vaulting	
6	Offered device should flexibly provide the following backup target types - VTL & NAS (NFS & CIFS)	
7	Offered device shall have the ability to configure at-least combination of 16 Tape Libraries & NAS targets along with 5,000 or more Cartridge slots in the single appliance.	
8	Offered device should support source based and target based de-duplication and should be integrated with all reputed backup ISVs	
9	Offered device shall have integrated de-duplication license & replication license so that only unique data or deduplicated data are transferred to remote / DR location.	
10	Offered device should be supported in de-duplication and shall be integrated with the offered backup software.	
11	Offered device shall have Minimum of 2 x 25Gbps SFP IP ports & 2 x 16/32Gbps FC ports. Licenses and required SFPs for all ports shall be offered and configured.	
12	The appliance should support ISV controlled Data immutability to ensure data retention defined as part of the retention policy to prevent unauthorized deletion of backup sets or objects prior to their expiry date.	
13	Offered disk based backupdevice should have encryption functionality.	

14	Offered disk based backup device shall also support Secure erase feature for protecting against unauthorized recovery of deleted data.	
15	Offered appliance should support enhanced security with dual/multi factor authorization/authentication or dual sign-on requiring the administrator and a second authorized authority such as a security officer to authorize performance of critical functions to protect against malicious attackers.	
16	Offered device shall support rated backup write performance of at- least 25TB/Hr of backup throughput.	
17	Warranty - 5 years 24x7 support	

**Item No. 53 of BoQ**

Tape drive- LTO-9 for DR Centre

S/N	Specifications	Compliance (Yes/No)
1	Offered Tape autoloader shall support Native data capacity of 144TB (uncompressed) expandable to 360TB (2.5:1 compressed) using LTO-9 technology.	
2	Tape Autoloader shall provide web based remote monitoring capability.	
3	The Tape autoloader unit shall be configured with one FC LTO Gen9 Tape Drives and minimum of 8 slots.	
4	Tape Drive Architecture in the autoloader shall conform to the INCITS T10 standard ADI Protocol or newer standards.	
5	Offered LTO-9 drive in the autoloader shall conform to the Data rate matching technique for higher reliability.	
6	Offered LTO -9 drive in the autoloader shall offer optional WORM support and embedded AES 256 bit Encryption support.	
7	Offered autoloader shall be provided with a hardware device like USB key, separate appliance etc. to keep all the encrypted keys in a redundant fashion.	
8	Offered LTO-9 drive shall have native speed of 300MB/sec.	
9	Tape Autoloader shall provide at-least 8Gbps Fiber connectivity to media / client server.	

10	Tape autoloader shall be supported with optional software from the same autoloader vendor software which can predict and prevent failures through early warning and shall also suggest the required service action.	
11	Software shall also have the capability to determine when to retire the tape cartridges and what compression ratio is being achieved.	
12	Software shall have capability to automatic testing of suspected drives with proactive diagnostics.	

**Item No. 25 of BoQ****Enterprise Management System EMS/NMS at DC/DR (in active-Passive mode)**

<b>S. No.</b>	<b>Specifications</b>	<b>Compliance (Yes/No)</b>
	<b>General</b>	
1	The offered solution shall be industry-standard Infrastructure Monitoring System running in active-passive mode in the Data Centre & DR Centre. In case there is a failure of the Application at DC, the instance at DR shall be operational. Given the scope of the project, EMS becomes very critical for IT Operations and SLA Measurement. Some of the critical aspects that need to be considered for operations of IT setup are: Network Monitoring, Network Configuration Management, Server Monitoring, Log Management, Flow Monitoring, ServiceDesk, Asset Management and Patch Management.	
2	The OEM should have deployed 5 similar projects in Government/PSU/banks etc. in India during the last 3 years. The documentary proof should be submitted along with bid	
3	The solution should be capable of running in Linux platform and should be 64-bit application to fully utilize the server resources on which it is installed.	
4	The OEM of the proposed solution must be ISO 27001:2013 & ISO 27034 certified to ensure security compliances. Documentary proof needs to be submitted in this regard.	
5	The proposed product should have CIS certification to ensure the security compliances. Documentary Proof needs to be submitted.	
6	OEM Should provide support for all upgrades and updates during the contract Period. The OEM should have a support centre with Dedicated Support mail id and toll free number in INDIA. OEM Should provide escalation matrix along with bid submission.	
7	The proposed product shall support minimum 3000 network components which include Switches, routers, firewall etc.	
8	OEM should provide on-site configuration and training along with training material.	



	<b>Network/Infra Monitoring</b>	
9	<b>The Monitoring Solution should provide Unified Architectural design offering seamless common functions including but not limited to: Event and Alarm management, Auto-discovery of the Network environment, Correlation, and root cause analysis, Reporting and analytics</b>	
10	<b>The solution must provide discovery &amp; inventory of heterogeneous physical network devices like Layer-2 &amp; Layer- 3 switches, Routers and other IP devices and do mapping of LAN connectivity with granular visibility up to individual ports level.</b>	
11	<b>The operator should be able to build correlation rules in a simple GUI based environment where the Operator should be able to correlate cross domain events</b>	
12	<b>The solution shall provide future scalability of the whole system without major architectural changes.</b>	
13	<b>The proposed solution must not use any third-party database (including RDBMS and open source) to store data to provide full flexibility and control on collected data.</b>	
14	<b>All the required modules should be from same OEM and should be tightly integrated for single pane of glass view of enterprise monitoring</b>	
15	<b>The solution must support custom dashboards for different role users such as Management, admin, and report users</b>	
16	<b>The solution must support custom query-based widget with multiple visualization methods including Chart, Gauge, Grid, Top N list etc. to visualize and represent collected data with ease.</b>	
17	<b>The solution should provide superior view of infrastructure health across system, networks, application and other IT Infrastructure components into a consolidated, central console</b>	
18	<b>The proposed solution must provide comprehensive and integrated management of IT infrastructure components to maximize the availability of IT services and SLA performance.</b>	
19	<b>The design functionality shall facilitate creation of templates used for monitoring key network resources, devices, and attributes. Default templates and best practice designs are provided for quick out-of-the- box implementation automating the work required to use OEM validated designs and best practices.</b>	
20	<b>The proposed solution must provide Health Monitoring reports of the network with settable periodicity -@24 Hrs, 1 week, 1</b>	

	<b>month.</b>	
21	<b>The proposed solution must provide the graphical layout of the network element with modules drawn using different colors to indicate their status</b>	
22	<b>The proposed solution should have multiple alerting feature to get the notification via email, sms and third-party systems</b>	
23	<b>The proposed solution should provide alert console with alert summary such as no. of correlated alert, network alert, server alert, virtualization alert, cloud alert, application alert etc.</b>	
24	<b>The system must have provision to overlay alert on reported metric to understand alert triggering behaviour across multiple drill down pages</b>	
25	<b>The proposed NMS solution must provide agentless as well as agent-based monitoring for server infrastructure. The agents should be able to set polling interval as low as 1 second with low overhead on target server infrastructure.</b>	
26	<b>The proposed solution should be able to take back up of running and startup configuration of network devices. It should also provide versioning for backup to track changes.</b>	
27	<b>The proposed system should be able to administer configuration changes to network elements by providing toolkits to automate the following administrative tasks of effecting configuration changes to network elements:</b> a) Capture running configuration. b) Capture startup configuration c) Upload configuration; d) Write start-up configuration; e) Upload firmware	
28	<b>The platform should be able to detect vulnerabilities for Linux and Windows server</b> • The AIOps platform must integrate seamlessly with the NVD to automatically import and update vulnerability information. • The platform should contextualize NVD data with additional information such as asset criticality, network exposure, and exploitability and help create custom prioritization.	
29	<b>The platform should have unified agent to collect telemetry data like Metric, log and vulnerability details.</b>	
30	<b>The platform should provide comprehensive OOTB organization wide vulnerability dashboard which should help identify actionable vulnerabilities to remediate.</b>	
	<b>Log Analytics</b>	
	<b>The solution should facilitate the transmission of the log data generated by the IT systems/ databases/ devices/</b>	

31	<b>applications/ appliances/ operating systems to the central server. The solution must be in a position to collect logs from the IT sources like: Network devices, OS, Database, Middleware, Hypervisors, Applications &amp; Security solutions, SAN devices, Security devices.</b>	
32	<b>The solution should have capability to collect the generated log in sequence. The log data must be transferred to the central server over the network on real-time basis or in occasional batches based on schedule or the amount of log data waiting to be transferred.</b>	
33	<b>Log Compression should facilitate storing of log file in a way that reduces the amount of storage space needed for the file without altering the meaning of its content.</b>	
34	<b>The proposed log management solution should include out-of- the-box parsers for various operating systems, databases, applications, network devices, and syslogs. Additionally, if any collected logs cannot be parsed then the console must provide seamless automation to extract fields from collected logs via drag and drop functionality to avoid log parsing complexity of collected logs from various syslog/ windows/ application sources.</b>	
	<b>Network Traffic/Flow Analytics</b>	
35	<b>The proposed traffic monitoring system must be able to track all network flow (including netflow v1-v9, Jflow, Sflow and IPFix) of traffic on the network and identify malicious behavior with all IP conversations.</b>	
36	<b>The proposed system must provide details of applications, hosts, and conversations consuming WAN bandwidth to isolate and resolve problems.</b>	
37	<b>The proposed system must provide baseline network flow policy to detect anomaly in traffic usage behaviour</b>	
38	<b>The solution must provide flow data explorer with capability to analyse extracted data using multiple columns , chart type, group by operators and filters. System must also provide dashboard to flow data explorer drill down capability.</b>	
39	<b>The proposed solution must be able to monitor and report on a variety of unique protocols (used in the overall deployed solutions) per day and display utilization data for each protocol individually. This capability must be available for each monitored interface uniquely.</b>	
40	<b>The proposed solution must keep historical rate and Ip to Ip, Ip to protocol, protocol to protocol conversation data for a minimum of 3 months (most recent) in its current long term</b>	

	<b>operating database. All data in that database must have a maximum 15 minute window granularity.</b>	
41	<b>Future Scalability – The system should be capable of supporting at least 15 thousand network flow per second on single server with capability to capture each unique traffic conversations</b>	
	<b>Helpdesk/Service Desk Management</b>	
42	<b>"The proposed helpdesk solution should have certification on at least 12 processes for ITIL4. Documentary Proof needs to be provided during bid submission</b>	
43	<b>The proposed helpdesk system shall provide flexibility of logging, viewing, updating and closing incident manually via web interface</b>	
44	<b>Each incident shall be able to associate multiple activity logs entries via manual update or automatic update from other enterprise management tools.</b>	
45	<b>The proposed helpdesk system shall be able to provide flexibility of incident assignment based on the workload, category, location etc.</b>	
46	<b>The proposed solution should automatically provide suggested knowledge base articles based on Incident properties with no programming</b>	
47	<b>The proposed solution should automatically suggest available technicians based on workload, average ticket closure time assigning tickets with no programming</b>	
48	<b>The proposed solution should tightly integrate with monitoring system to provide two way integration - E.g. when system down alarm created, it should automatically create ticket and assign it to technician, in case system comes up before ticket is resolved by technician, it should automatically close the ticket to minimize human efforts</b>	
49	<b>The proposed system must not create more than one ticket for same recurring alarm to avoid ticket flooding from Monitoring system</b>	
50	<b>The proposed helpdesk system shall support tracking of SLA (service level agreements) for call requests within the help desk through service types.</b>	
	<b>Asset Management</b>	
51	<b>The proposed solution allow scheduling periodic report to check current software and hardware inventory (for 10000 devices)</b>	
52	<b>The Proposed solution should provide end to end Asset Life Cycle Management: Makes it easier to handle the complete life cycle of an asset, that is, all stages/modules</b>	

	<b>from procurement to disposal</b>	
53	<b>The proposed solution must allow attaching CI record to generated service tickets</b>	
54	<b>The Proposed solution should support maintaining AMC/Warranty Information with Alerting when about to expire also provide Asset Deletion capabilities enabled with workflow engine</b>	
55	<b>The proposed solution should provide Asset Dashboards/Reporting: Graphical representation all the assets based on Category, location, aging of the asset, customer, which can be further level down to the incident record ID. The proposed asset management should be able take remote of the desktop system.</b>	
56	<b>The proposed solution must provide asset baselining to manage and track asset effectively. The asset management module patch management module should be from the same OEM for tight integration purpose.</b>	
	<b>Patch Management</b>	
57	<b>The proposed Solution should support automated patch management for critical security patch deployment on physical machines and other infra including Windows, Linux etc.</b>	
58	<b>The proposed solution should support patch evaluation in a test environment before distributing</b>	
59	<b>The proposed solution should highlight missing critical patches and should re-attempt failed patches</b>	
60	<b>The proposed solution should support mechanism to decline or delay an unnecessary patch that may cause any problem to overall IT infrastructure</b>	
61	<b>The proposed solution should support rollback of patches and service pack applied on the machines</b>	
62	<b>The proposed solution should support remote patch management</b>	
63	<b>The proposed solution should come along with standard reports and can generate the customized reports as per business requirement. The Patch Management solution should be capable of generating real-time reports on patches deployed, when, by whom, to which endpoints, etc.</b>	
64	<b>The proposed solution should provide mechanism to centrally set/reset registry value in target Window machine.</b>	
65	<b>The proposed solution should be able to provide the package/software deployment as option to centrally deploy in target window machines.</b>	
66	<b>The proposed solution should have an option to define multiple deployment policies for deploying patches.</b>	

67	The proposed solution should show the system health based on missing patches.	
68	The proposed solution should be able to deploy exe, msi/msp packages and scripts on end machines.	
69	Proposed solution should have bundled reporting software so no third party tools would be required to customize reports	
70	Proposed solution should be able to provide audit reports	
71	Proposed solution should be capable of integrating with one or more Active Directory structures whenever required	
72	Proposed solution should be able to install package through following mechanisms: -Push -Pull -User-Self Service	
73	Proposed solution should support rollback of patches and service packs applied, if rollback is supported for that particular Patch/Service packs	
74	Proposed solution should be able to provide patch deployment status monitoring	

**Item No. 26 of BoQ**

Mail Messaging System at DC/DR (in active-passive mode)

S. NO.	Category	OEM requirements	Documents Required
		Criteria	
1	ISO Certifications	Email OEM must have all the following valid latest certifications (a) ISO 9000:2015 (b) ISO 20000-1:2018 (c) ISO 22301:2019	Valid Copy of these certificates
2	Experience - Mailboxes & Organizations	Email software OEM should have experience of providing mailboxes to at least 100000 users during last 3 years and to atleast 100 Organizations (globally) during last 3 years.	Self-Declaration from the authorized signatory on OEM's letter head.
Sl. No	Email System Specifications		Compliance
1	<b>A. End User Features</b>		
	General Features		
2	The mail messaging system shall be running in active-passive mode in the Data Centre & DR Centre. In case there is a failure of the Application at DC, the instance at DR shall be operational		
3	Should support large indexed mailboxes & have advanced search features. The solution shall support 5000 mailboxes		

4	Should support all features across all popular Browser (e.g. Firefox/Chrome/Safari/IE etc)	
5	Should support e-mail, Address Book, Calendar, Task, File Sharing, Document Collaboration	
6	The mail messaging software should be Linux based and shall be able to integrate with OpenLDAP to provide same user ID & password for user authentication	
7	Should have rich, interactive, web-based interface for end user functions (access through HTTPS)	
8	Spell check facility while composing email	
9	Users should be able to sort emails in a conversation view & should be able to sort emails on From, To, Subject date etc.	
10	Users should be able to configure Out of Office messages, separate for internal & external users.	
11	Users should be able to create multiple custom signatures	
12	The email should be automatically saved in "Drafts" while the user is composing the mail	
13	User should be able to define their viewing panes	
14	Users should have the feature to share mail boxes to peers defining specific rights	
15	User should have the feature of delegating his/her mailbox and the delegated user should have access to send email on behalf of the user	
16	User should have the feature of managing personas (manage multiple email accounts from a single login)	
17	Web Mail Client	
18	The webmail client should be tightly bound with the messaging software and should be from the same principal as the messaging software	
19	Rich, interactive, web-based interface for end user functions	
20	Email software should support S/MIME for email encryption on the web client	
21	Support for Digital encryption on Webmail client	
22	Users should be capable of viewing the total size and available space of their mail boxes	
23	The administrator should be able to define log-out time after a specific period of in-activity on the webmail and should have Secure logout from Web mail client to prevent unauthorized access to mail pages after sign out.	
24	Should support lookup of addresses from the central directory	
25	Should have the feature of creating filters/rules	
26	Users should be able to view Organisation chart from the Webclient	
27	Users should be able to restore deleted emails even from the trash from the web client	

28	Native Desktop / Thick Offline Client	
29	The bidder should quote for a native Offline client from the same OEM/Principal as the messaging software.	
30	The offline client should be available to Linux and Windows OS	
31	Offline client should have the capability to access emails offline	
32	The offline client should have a provision of Auto-Archive emails for clearing the quota on the server and making a copy of email on the local PC/Laptop	
33	The offline client should create the same folder structure as on the server while creating a local copy / archive	
34	Users should be able to restore deleted emails even from the trash from the thick client	
35	The proposed product shall be compatible with other common Mail client Utilities like MS Outlook, Thunderbird, Evolution etc.	
	Address Book	
36	The mail messaging software should have the capability to create personal address book for every user	
37	User should be able to look for email addresses from the Global Address book (GAL)	
38	Calendar	
39	The mail messaging software should have the capability to schedule personal appointments	
40	The mail messaging software should have the capability to view free/busy status for the invitees for the internal users	
41	Users should be able to create recurring meetings	
42	Users should be able to block meeting rooms & resources	
43	The recipient will have a choice to accept, decline or tentatively accept an invite or delegate	
44	Document Sharing & Collaboration	
47	Users should be able to share the documents internally / externally	
48	Users should be able to do a real time collaboration i.e. multiple users should be able to work on the same document on the same time	
49	Users should be able download the files from the document collaboration platform in common office formats	
50	The email solution should have a native capability for file sharing and custom folder creation by end users	
51	Users should be able to attach files from the Drive in directly in the compose window	
52	Drag and Drop Attachments	
53	User should be able to add attachments with size warnings	
54	User should be able to add links of file storage.	
	Users should be able to drag and drop attachments in the	



55	webmail client	
56	B. Server Features	
57	General	
58	The proposed Messaging Solution should be Enterprise Grade and should not include any individual components running on Beta version	
59	Messaging Server edition should run on any of the Linux platforms (RHEL, Debian, Ubuntu, Oracle Linux etc.)	
60	The mail messaging software should have the capability to customize the log-in page	
61	Should support hosting messaging sub-systems by role (like protocol, message storage, directory database, message routing, etc.) on more than one physical server/Virtual Machines or on the same server using Logical Partitioning.	
62	The product shall have compatibility with OpenLDAP for authentication	
63	The product shall be with redundant architecture in terms of SMTP, POP3 and IMAP Servers	
	Storage	
63	The software should be able to configure storage volumes for older messages Out of the Box with no additional use of any third party application. To manage your email storage resources i.e. Messages and attachments are moved from a primary volume to the current secondary volume based on the age of the message. The messages should be still accessible.	
64	Message De-duplication: The System should not duplicate the message, thus it should provide single instance storage	
65	Domain-Level Management	
66	Ability to create and manage multiple mail domains within a single instance of Messaging Solution	
67	The mail messaging software should support Delegated Admin. The mail system administrator should be able to create, delete user accounts and manage control the mail archival /journal solution.	
68	The administrator should have the capability to run a search for a mail across all the mailboxes on the server	
69	Server Security	
70	The mail messaging software should provide multi-factor authentication for more security	
71	The proposed messaging solution should relay mails only from authenticated users.	
72	The directory server proposed with the messaging solution should provide user's authentication using industry standard authentication mechanism compliant with LDAP v3.0	
73	The mail messaging software should be running on SSL (HTTPS)	
	The mail messaging software should support security	

74	features like DKIM(Domain Keys Identified Mail) , SSL ( Secured Socket layer), TLS ( Transport Layer Security) etc.	
75	Email messaging software should allow delegated role based access control	
76	Backup / Recovery	
77	The mail messaging solution should have an integrated online backup/restore mechanism for mail boxes	
78	The Solution should ensure that the backup software provides a real-time/scheduled backup.	
79	Administrator can restore a single mailbox for the user	
80	User should have the privilege to restore deleted (even from Trash) mails him/herself without the help of the administrator with-in a defined time	

**Item No. 29 of BoQ**

Desktop PC Type-I for NOC Room

S/N	Specifications	Complied Y/N
1	CPU-Intel Core-i5, 13 <sup>th</sup> Gen, 6 Core CPU	
2	16GB DDR4 RAM	
3	512GB NVMe SSD	
4	21" FHD LED Monitor same make as that of PC	
5	USB Keyboard and mouse, same make as that of PC	
6	Ports- 10/100/1000 On board NIC, USB 3.0	
7	Commercial segment	
8	Windows 11 Professional OS	

**Item No. 30 of BoQ**

Desktop PC Type-II for NOC Room

S/N	Specifications	Complied Y/N
1	CPU-Intel Core-i5, 13 <sup>th</sup> Gen, 6 Core CPU	
2	16GB DDR4 RAM	
3	512GB NVMe SSD	
4	21" FHD LED Monitor same make as that of PC	
5	USB Keyboard and mouse, same make as that of PC	
6	Ports- 10/100/1000 On board NIC, USB 2.0	
7	Commercial segment	
8	Ubuntu Linux OS	

**Item No. 31 of BoQ**

Laptop for System/Network Admins

S/N	Specifications	Complied Y/N
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1	CPU-Intel Core-i5, 13 <sup>th</sup> Gen, 6 Core CPU	
2	16GB DDR4 RAM	
3	512GB NVMe SSD	
4	14/15" FHD LED display	
5	Ports- USB 3.0 – 2 nos, USB Type C – 1 no., HDMI Port	
6	Commercial segment	
7	Windows 11 Professional OS	

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 8****PRICE BID**

To be uploaded as pdf (On Organization Letter Head)

EOI NO. RCIL/SR/ERS/2024-25/EOI/10 DTD. 10-01-2025

To,

The Joint General Manager (ERS)

RailTel Corporation India Limited,

Kerala Territory Office,

1<sup>st</sup> Floor, Eastern Entry Tower

Ernakulam South Railway Station

Ernakulam – 682016

TENDER NO: **CEIT/ITCSD/10/2024-25 dtd 27.09.2024**

The RFP published by KSEB for the work vide **CEIT/ITCSD/10/2024-25 dtd 27.09.2024** as circulated March please be referred for any clarifications. **The submission of EMD, PBG, SD and Agreement with RCIL Non-Judicial paper by the selected Bidder will be sacrosanct selected Bidder.**

**BoQ 1: PRICE SCHEDULE- Revamping of IT Infrastructure at Data Centre (DC) and DR Centre**

Sl.No	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder in Rs. P	Unit GST Rate in Rs. P	Total GST Amount in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT With Taxes in Rs. P	TOTAL AMOUNT In Words
1	<b>Data Centre</b>								
1.10 0	<b>Compute</b>								
1.10 1	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	6.00	Nos			0.00	0.00	0.00	INR Zero Only
1.10 2	Server with 2 x 48 Core 2.3 GHz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS,	4.00	Nos			0.00	0.00	0.00	INR Zero Only

	SR Optics, 2 x 480GB NVME								
1.10 3	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME	3.00	Nos			0.00	0.00	0.00	INR Zero Only
1.10 4	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME	3.00	Nos			0.00	0.00	0.00	INR Zero Only
1.10 5	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1.101)	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.10 6	Cloud Infra Solutions for Critical workload (For Servers under S/N.1.102)	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>1.20 0</b>	<b>Network infrastructure</b>								
1.20 1	Spine switch with 32 Port 100G loaded with 16 SR Optics modules on each spine	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.20 2	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 24 nos 10G-3 nos on Each leaf	8.00	Nos			0.00	0.00	0.00	INR Zero Only
1.20 3	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 12x25G, 10x10G, 6x1G modules on Each leaf	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.20 4	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G,	2.00	Nos			0.00	0.00	0.00	INR Zero Only

	10x1G on Each Switch								
1.20 5	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.20 6	NOC LAN Switches 48 Port 1G Copper Port Switch loaded with 2 x 10G Optics on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.20 7	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.20 8	DCN Fabric Manager as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.20 9	OEM fiber Patch Cords- 25Mtrs	20.00	Nos			0.00	0.00	0.00	INR Zero Only
1.21 0	OEM fiber Patch Cords- 15Mtrs	10.00	Nos			0.00	0.00	0.00	INR Zero Only
1.21 1	OEM fiber Patch Cords- 5Mtrs	20.00	Nos			0.00	0.00	0.00	INR Zero Only
1.21 2	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	1.00	LS			0.00	0.00	0.00	INR Zero Only
<b>1.30 0</b>	<b>Storage &amp; Backup Systems</b>								
1.30 1	400TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 5.5 Lakhs IOPS	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.30 2	48 Port 32Gbps SAN Switches with 48 nos. of 32Gbps SFPs	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.30 3	Backup Solution- 60 VM & 4 Container worker node licenses	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.30 4	Tape library with 2xLTO-9 tape drives	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.30 5	Backup Appliance NLS SAS-100TB	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.30 6	OEM fiber Patch Cords 10/15Mtrs for	1.00	LS			0.00	0.00	0.00	INR Zero Only

	Servers to SAN Switch connectivity (Should consider based on Server QTY)								
<b>1.40</b> <b>0</b>	<b>EMS/ NMS &amp; Mail Messaging System</b>								
1.40 1	EMS/NMS Software as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.40 2	Mail Messaging System as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>1.50</b> <b>0</b>	<b>Miscellaneous</b>								
1.50 1	42U OEM Racks for Servers/network equipments	4.00	Nos			0.00	0.00	0.00	INR Zero Only
1.50 2	Man power deployment charges (One resource during office hours at Data Centre for a period of year)	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.50 3	Desktops Type -I for NOC Room	10.00	Nos			0.00	0.00	0.00	INR Zero Only
1.50 4	Desktops Type -II for NOC Room	5.00	Nos			0.00	0.00	0.00	INR Zero Only
1.50 5	Laptops for System/ Network Administrators	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.50 6	Miscellaneous Items for Data Centre	1.00	LS			0.00	0.00	0.00	INR Zero Only
<b>2</b>	<b>DR Centre</b>								
2.10 0	<b>Compute</b>								
2.10 1	Server with 2 x 32 Core 2.5 Ghz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	4.00	Nos			0.00	0.00	0.00	INR Zero Only
2.10 2	Server with 2 x 48 Core 2.3 Ghz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	3.00	Nos			0.00	0.00	0.00	INR Zero Only
2.10 3	Cloud Infra Solutions for Digital Infrastructure workload (For	1.00	Nos			0.00	0.00	0.00	INR Zero Only

	Servers under S/N.2.101)								
<b>2.200</b>	<b>Network infrastructure</b>								
2.201	Spine switch with 12/24 Port 100G loaded with 8 SR Optics modules on each spine	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.202	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 12 nos and 10G-12 on Each leaf	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.203	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 6x25G, 5x10G, 6x1G modules on each Leaf	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.204	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.205	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.206	NOC LAN Switches 24 Port 1G Copper Port Switch loaded with 2 x 10G Optics	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.207	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.208	DCN Fabric Manager as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.209	OEM fiber Patch Cords- 25Mtrs	10.00	Nos			0.00	0.00	0.00	INR Zero Only
2.210	OEM fiber Patch Cords- 15Mtrs	6.00	Nos			0.00	0.00	0.00	INR Zero Only
2.211	OEM fiber Patch Cords- 5Mtrs	10.00	Nos			0.00	0.00	0.00	INR Zero Only



2.21 2	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	1.00	LS			0.00	0.00	0.00	INR Zero Only
<b>2.30 0</b>	<b>Storage &amp; Backup Systems</b>								
2.30 1	200TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G , Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 4 Lakhs IOPS	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.30 2	48 Port 32Gbps SAN Switches with 24 nos. of 32Gbps SFPs	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.30 3	Backup Solution – SVM License	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.30 4	Tape drive- LTO-9, 18TB drive	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>2.40 0</b>	<b>Miscellaneous</b>								
2.40 1	Miscellaneous Items for DR	1.00	LS			0.00	0.00	0.00	INR Zero Only
<b>3</b>	<b>REMOTE LOCATION</b>								
3.00 1	Backup Appliance NL SAS-100TB	1.00	Nos			0.00	0.00	0.00	INR Zero Only
4	Installation and Commissioning charges								
4.00 1	Supply, installation, configuration, integration, testing, commissioning and golive of all hardware and software components.	1.00	LS			0.00	0.00	0.00	INR Zero Only
Total in figures							0.00	0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only							

**BoQ 2: PRICE SCHEDULE- Rate Contract for additional materials for upgrade based on demand**

Sl.No	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder in Rs. P	Unit GST Rate in Rs. P	Total GST Amount in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT With Taxes in Rs. P	TOTAL AMOUNT In Words
1	64GB RAM for Servers	5.00	Nos			0.00	0.00	0.00	INR Zero Only
2	Storage Upgrade (50TB unit)	5.00	Nos			0.00	0.00	0.00	INR Zero Only
3	100G SR optics	5.00	Nos			0.00	0.00	0.00	INR Zero Only
4	32G SR optics	10.00	Nos			0.00	0.00	0.00	INR Zero Only
5	25G SR optics	10.00	Nos			0.00	0.00	0.00	INR Zero Only
6	10G SR optics	25.00	Nos			0.00	0.00	0.00	INR Zero Only
7	Backup Solutions License – 10VM	1.00	Nos			0.00	0.00	0.00	INR Zero Only
8	EMS/NMS-Network Device License (500 Nos in each Unit)	2.00	Nos			0.00	0.00	0.00	INR Zero Only
9	Mail Messaging System- User account/mail box license (500 Nos in each Unit)	2.00	Nos			0.00	0.00	0.00	INR Zero Only
Total in Figures							0.00	0.00	INR Zero Only
Quoted Rate in Words									

**BoQ 3: PRICE SCHEDULE-Extended warranty for the 6th and & 7th year for all active components in BOQ Sheet No 1**

Sl.No	Item Description	Quantity	Units	Basic Rate for Extended Warranty for the 6th & 7th year together (excluding GST) in Figures To be entered by the Bidder in Rs. P	Unit GST Amount for Extended Warranty of 6th & 7th year in Rs. P	Total GST Amount in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT With Taxes in Rs. P	TOTAL AMOUNT In Words
1	<b>Data Centre</b>								
1.100	<b>Compute</b>								
1.101	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	6.00	Nos			0.00	0.00	0.00	INR Zero Only
1.102	Server with 2 x 48 Core 2.3 GHz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME, SR Optics	4.00	Nos			0.00	0.00	0.00	INR Zero Only
1.103	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME, SR Optics	3.00	Nos			0.00	0.00	0.00	INR Zero Only

1.104	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA,RPS, SR Optics, 2 x 480GB NVME, SR Optics	3.00	Nos			0.00	0.00	0.00	INR Zero Only
1.105	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1.101)	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.106	Cloud Infra Solutions for Critical workload (For Servers under S/N.1.102)	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>1.200</b>	<b>Network infrastructure</b>								
1.201	Spine switch with 32 Port 100G loaded with 16 SR Optics modules on each spine	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.202	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 24 nos 10G-3 nos on Each leaf	8.00	Nos			0.00	0.00	0.00	INR Zero Only
1.203	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 12x25G, 10x10G, 6x1G	2.00	Nos			0.00	0.00	0.00	INR Zero Only

	modules on Each leaf								
1.204	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.205	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.206	NOC LAN Switches 48 Port 1G Copper Port Switch loaded with 2 x 10G Optics on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.207	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.208	DCN Fabric Manager as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>1.300</b>	<b>Storage &amp; Backup Systems</b>								
1.301	400TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4	1.00	Nos			0.00	0.00	0.00	INR Zero Only

	PORT 25G, RPS, Snapshots, DC-DR Replication, 7 Lakhs IOPS								
1.302	48 Port 32Gbps SAN Switches with 48 nos. of 32Gbps SFPs	2.00	Nos			0.00	0.00	0.00	INR Zero Only
1.303	Backup Solution- 60 VM & 4 Container worker node licenses	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.304	Tape library with 2xLTO-9 tape drives	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.305	Backup Appliance NLS SAS-100TB	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>1.400</b>	<b>EMS/ NMS &amp; Mail Messaging System</b>								
1.401	EMS/NMS Software as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
1.402	Mail Messaging System as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>1.500</b>	<b>Miscellaneous</b>								
1.501	Desktops Type -I for NOC Room	10.00	Nos			0.00	0.00	0.00	INR Zero Only
1.502	Desktops Type -II for NOC Room	5.00	Nos			0.00	0.00	0.00	INR Zero Only
1.503	Laptops for System/ Network Administrators	2.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>2</b>	<b>DR Centre</b>								
2.100	<b>Compute</b>								

2.101	Server with 2 x 32 Core 2.5 Ghz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	4.00	Nos			0.00	0.00	0.00	INR Zero Only
2.102	Server with 2 x 48 Core 2.3 Ghz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	3.00	Nos			0.00	0.00	0.00	INR Zero Only
2.103	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1.01)	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>2.200</b>	<b>Network infrastructure</b>								
2.201	Spine switch with 12/16 Port 100G loaded with 8 SR Optics modules on each spine	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.202	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 12 nos and 10G- 12 on Each leaf	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.203	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G,	2.00	Nos			0.00	0.00	0.00	INR Zero Only

	6x25G, 5x10G, 6x1G modules on each Leaf								
2.204	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.205	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.206	NOC LAN Switches 24 Port 1G Copper Port Switch loaded with 2 x 10G Optics	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.207	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.208	DCN Fabric Manager as per specifications	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>2.300</b>	<b>Storage &amp; Backup Systems</b>								
2.301	200TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G , Dual 4 PORT 25G, RPS,	1.00	Nos			0.00	0.00	0.00	INR Zero Only



	Snapshots, DC-DR Replication, 4 Lakhs IOPS								
2.302	48 Port 32Gbps SAN Switches with 24 nos. of 32Gbps SFPs	2.00	Nos			0.00	0.00	0.00	INR Zero Only
2.303	Backup Solution – 5VM License	1.00	Nos			0.00	0.00	0.00	INR Zero Only
2.304	Tape drive-LTO-9, 18TB drive	1.00	Nos			0.00	0.00	0.00	INR Zero Only
<b>3</b>	<b>REMOTE LOCATION</b>								
3.001	Backup Appliance NL SAS-100TB	1.00	Nos			0.00	0.00	0.00	INR Zero Only
Total in Figures							0.00	0.00	
Quoted Rate in Words		INR Zero Only							

**BoQ 4: PRICE SCHEDULE- Extended warranty for additional 2 years after the expiry of 5 year initial warranty for the additional items in BOQ Sheet No 2**

Sl.No	Item Description	Quantity	Units	Basic Rate for Extended Warranty for additional 2 years ( excluding GST) in Figures To be entered by the Bidder in Rs.	Unit GST Amount for 2 year Extended Warranty of Rs. P	Total GST Amount in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT With Taxes in Rs. P	TOTAL AMOUNT In Words
1	64GB RAM for Servers	5.00	Nos			0.00	0.00	0.00	INR Zero Only
2	Storage Upgrade (50TB unit)	5.00	Nos			0.00	0.00	0.00	INR Zero Only

3	100G SR optics	5.00	Nos		0.00	0.00	0.00	INR Zero Only
4	32G SR optics	10.00	Nos		0.00	0.00	0.00	INR Zero Only
5	25G SR optics	10.00	Nos		0.00	0.00	0.00	INR Zero Only
6	10G SR optics	25.00	Nos		0.00	0.00	0.00	INR Zero Only
Total in Figures						0.00	0.00	INR Zero Only
Quoted Rate in Words			INR Zero Only					

**BoQ 5: PRICE SCHEDULE- Consolidated BOQ**

SL NO	Item Description	Total Amount In Figures To be entered by the Bidder in Rs. P	TOTAL AMOUNT including GST in Rs. P	TOTAL AMOUNT In Words
1	Total of BoQ 1		0.00	INR Zero Only
2	Total of BoQ 2		0.00	INR Zero Only
3	Total of BoQ 3		0.00	INR Zero Only
4	Total of BoQ 4		0.00	INR Zero Only
Total in Figures			0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only		

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 9****PROFORMA FOR PERFORMANCE BANK GUARANTEE**

(On Stamp Paper of ₹ Two Hundred/requisite value)

To,

The Joint General Manager (ERS)

RailTel Corporation India Limited,

Kerala Territory Office,

1<sup>st</sup> Floor, Eastern Entry Tower

Ernakulam South Railway Station

Ernakulam – 682016

Ref. No.: GEM/20241815639583 dtd 25.11.2024; latest amendment/ Corrigendum / clarifications. Floated on: Gem portal (<https://gem.gov.in/>)

1. In consideration of the RailTel Corporation of India Limited (CIN: L64202DL2000GOI107905), having its registered office at Plate-A, 6<sup>th</sup> Floor, Office Block Tower-2, East Kidwai Nagar, New Delhi – 110023 (herein after called “RailTel”) having agreed to exempt ..... (CIN: ..... ) having its registered office at..... (Herein after called “the said Contractor”) from the demand, under the terms and conditions of Purchase Order No ..... dated..... made between RailTel and.....for (hereinafter called “the said Agreement”) of security deposit for the due fulfilment by the said Contractor of the terms and condition contained in the said Agreement, or production of a Bank Guarantee for Rs. .... (Rs..... Only). We ..... (Indicate the name and address and other particulars of the Bank) (hereinafter referred to as ‘the Bank’) at the request of .....contractor do hereby undertake to pay RailTel an amount not exceeding Rs. .... (Rs ..... Only) against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor of any of the terms or conditions contained in the said Agreement.
2. We, ..... the Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage by the said Contractor of any of terms or conditions contained in the said Agreement by reason of the Contractor’s failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs ..... (Rs.....Only).
3. We, ..... the Bank undertake to pay the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal. The payment so made by us under this Bond shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.

4. We, ..... the Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said

Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor and accordingly discharges this Guarantee. Unless a demand or claim under the Guarantee is made on us in writing on or before .....We shall be discharged from all liability under this Guarantee thereafter.

5. We, ..... the Bank further agree with the RailTel that the RailTel shall have fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for anytime or from time to time any of the powers exercisable by the RailTel against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension to the said Contractor or for any forbearance, act or omission on the part of RailTel or any indulgence by the RailTel to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

This Guarantee will not be discharge due to the change in the constitution of the Bank or the Contract or ( ..... indicate the name of Bank ..... ) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of RailTel in writing.

Dated the ..... Day of ..... 2024 for ..... (Name of Bank) In the presence of Witnesses:

1. Signature with Date & Name

2. Signature With Date & Name

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

**ANNEXURE 10****NON-DISCLOSURE AGREEMENT**

This Non-Disclosure Agreement (this "Agreement") is made and entered into on this \_\_\_\_ day of, 2021 (the "Effective Date") at by and between RailTel Corporation of India Limited, (CIN: L64202DL2000GOI107905), a Public Sector Undertaking under Ministry of Railways, Govt. of India, having its registered and corporate office at Plate-A, 6th Floor, Office Block, Tower-2, East Kidwai Nagar, New Delhi-110023 & Southern Region office at 1-10-39 to 44, 6A, 6th Floor, Gumidelli Towers, Begumpet Airport Road, Opp. Shoppers Stop, Hyderabad- 500016, (hereinafter referred to as 'RailTel'), which expression shall unless repugnant to the context or meaning thereof, deem to mean and include its successors and its permitted assignees of the ONE PART, and ) (CIN: \_\_\_\_\_), a company duly incorporated under the provisions of Companies Act, having its registered office at , (hereinafter referred to as ' '), which expression shall unless repugnant to the context or meaning thereof, deem to mean and include its successors and its permitted assignees of OTHER PART RailTel and \_\_\_\_\_ shall be individually referred to as "Party" and jointly as "Parties" WHEREAS, RailTel and \_\_\_\_\_, each possesses confidential and proprietary information related to its business activities, including, but not limited to, that information designated as confidential or proprietary under Section 2 of this Agreement, as well as technical and non- technical information, patents, copyrights, trade secrets, know-how, financial data, design details and specifications, engineering, business and marketing strategies and plans, forecasts or plans, pricing strategies, formulas, procurement requirements, vendor and customer lists, inventions, techniques, sketches, drawings, models, processes, apparatus, equipment, algorithms, software programs, software source documents, product designs and the like, and third party confidential information (collectively, the "Information"); WHEREAS, the Parties have initiated discussions regarding a possible business relationship for WHEREAS, each Party accordingly desires to disclose certain Information (each Party, in such disclosing capacity, the "Disclosing Party") to the other Party (each Party, in such receiving capacity, the "Receiving Party") subject to the terms and conditions of this Agreement.

NOW THEREFORE, in consideration of the receipt of certain Information, and the mutual promises made in this Agreement, the Parties, intending to be legally bound, hereby agree as follows:

**1. Permitted Use.**

(a) Receiving Party shall:

- (i) hold all Information received from Disclosing Party in confidence;
- (ii) use such Information for the purpose of evaluating the possibility of entering into a commercial arrangement between the Parties concerning such Information; and
- (iii) restrict disclosure of such Information to those of Receiving Party's officers, directors, employees, affiliates, advisors, agents and consultants (collectively, the "Representatives") who the Receiving Party, in its reasonable discretion, deems need to know such Information, and are bound by the terms and conditions of (1) this Agreement, or (2) an agreement with terms and conditions substantially similar to those set forth in this Agreement.

(b) The restrictions on Receiving Party's use and disclosure of Information as set forth above shall not apply to any Information that Receiving Party can demonstrate:

- (i) is wholly and independently developed by Receiving Party without the use of Information of Disclosing Party;
- (ii) at the time of disclosure to Receiving Party, was either (A) in the public domain, or (B) known to Receiving Party;
- (iii) is approved for release by written authorization of Disclosing Party; or

- (iv) is disclosed in response to a valid order of a court or other governmental body in the India or any political subdivision thereof, but only to the extent of, and for the purposes set forth in, such order; provided, however, that Receiving Party shall first and immediately notify Disclosing Party in writing of the order and permit Disclosing Party to seek an appropriate protective order.
- (c) Both parties further agree to exercise the same degree of care that it exercises to protect its own Confidential Information of a like nature from unauthorized disclosure, but in no event shall a less than reasonable degree of care be exercised by either party.

**2. Designation.**

(a) Information shall be deemed confidential and proprietary and subject to the restrictions of this Agreement if, when provided in:

- (i) written or other tangible form, such Information is clearly marked as proprietary or confidential when disclosed to Receiving Party; or
- (ii) oral or other intangible form, such Information is identified as confidential or proprietary at the time of disclosure.

**3. Cooperation.** Receiving Party will immediately give notice to Disclosing Party of any unauthorized use or disclosure of the Information of Disclosing Party.

**4. Ownership of Information.** All Information remains the property of Disclosing Party and no license or other rights to such Information is granted or implied hereby. Notwithstanding the foregoing, Disclosing Party understands that Receiving Party may currently or in the future be developing information internally, or receiving information from other parties that may be similar to Information of the Disclosing Party. Notwithstanding anything to the contrary, nothing in this Agreement will be construed as a representation or inference that Receiving Party will not develop products, or have products developed for it, that, without violation of this Agreement, compete with the products or systems contemplated by Disclosing Party's Information.

**5. No Obligation.** Neither this Agreement nor the disclosure or receipt of Information hereunder shall be construed as creating any obligation of a Party to furnish Information to the other Party or to enter into any agreement, venture or relationship with the other Party.

**6. Return or Destruction of Information.**

(a) All Information shall remain the sole property of Disclosing Party and all materials containing any such Information (including all copies made by Receiving Party) and its Representatives shall be returned or destroyed by Receiving Party immediately upon the earlier of:

- (i) termination of this Agreement;
- (ii) expiration of this Agreement; or
- (iii) Receiving Party's determination that it no longer has a need for such Information.

(b) Upon request of Disclosing Party, Receiving Party shall certify in writing that all Information received by Receiving Party (including all copies thereof) and all materials containing such Information (including all copies thereof have been destroyed.

**7. Injunctive Relief.** Without prejudice to any other rights or remedies that a party may have, each party acknowledges and agrees that damages alone may not be an adequate remedy for any breach of this Agreement,

and that a party shall be entitled to seek the remedies of injunction, specific performance and/or any other equitable relief for any threatened or actual breach of this Agreement.

#### **8. Notice.**

(a) Any notice required or permitted by this Agreement shall be in writing and shall be delivered as follows, with notice deemed given as indicated:

- (i) by personal delivery, when delivered personally;
- (ii) by overnight courier, upon written verification of receipt; or
- (iii) by certified or registered mail with return receipt requested, upon verification of receipt.

(b) Notice shall be sent to the following addresses or such other address as either Party specifies in writing.

RailTel Corporation of India limited:

Attn:

Address:

Phone:

Email:

#### **9. Term, Termination and Survivability.**

(a) Unless terminated earlier in accordance with the provisions of this agreement, this Agreement shall be in full force and effect for a period of    years from the effective date hereof.

(b) Each party reserves the right in its sole and absolute discretion to terminate this Agreement by giving the other party not less than 30 days' written notice of such termination.

(c) Notwithstanding the foregoing clause 9(a) and 9 (b), Receiving Party agrees that its obligations, shall:

- (i) In respect to Information provided to it during the Term of this agreement, shall survive and continue even after the expiry of the term or termination of this agreement; and
- (ii) not apply to any materials or information disclosed to it thereafter.

**10. Governing Law and Jurisdiction.** This Agreement shall be governed in all respects solely and exclusively by the laws of India without regard to its conflicts of law principles. The Parties hereto expressly consent and submit themselves to the jurisdiction of the courts of New Delhi.

**11. Counterparts.** This agreement is executed in duplicate, each of which shall be deemed to be the original and both when taken together shall be deemed to form a single agreement

**12. No Definitive Transaction.** The Parties hereto understand and agree that no contractor agreement with respect to any aspect of a potential transaction between the Parties shall be deemed to exist unless and until a definitive written agreement providing for such aspect of the transaction has been executed by a duly authorized representative of each Party and duly delivered to the other Party (a "Final Agreement"), and the

Parties hereby waive, in advance, any claims in connection with a possible transaction unless and until the Parties have entered into a Final Agreement.

### **13. Settlement of Disputes:**

(a) The parties shall, at the first instance, attempt to resolve through good faith negotiation and consultation, any difference, conflict or question arising between the parties hereto relating to or concerning or arising out of or in connection with this agreement, and such negotiation or consultation shall begin promptly after a Party has delivered to another Party a written request for such consultation.

b) In the event of any dispute, difference, conflict or question arising between the parties hereto, relating to or concerning or arising out of or in connection with this agreement, is not settled through good faith negotiation or consultation, the same shall be referred to arbitration by a sole arbitrator

**14.** The sole arbitrator shall be appointed by KSEB/RailTel out of the panel of independent arbitrators maintained by RailTel, having expertise in their respective domains. The seat and the venue of arbitration shall be New Delhi. The arbitration proceedings shall be in accordance with the provision of the Arbitration and Conciliation Act 1996 and any other statutory amendments or modifications thereof. The decision of arbitrator shall be final and binding on both parties. The arbitration proceedings shall be conducted in English Language. The fees and cost of arbitration shall be borne equally between the part.

### **15. CONFIDENTIALITY OF NEGOTIATIONS**

Without the Disclosing Party's prior written consent, the Receiving Party shall not disclose to any Person who is not a Representative of the Receiving Party the fact that Confidential Information has been made available to the Receiving Party or that it has inspected any portion of the Confidential Information or that discussions between the Parties may be taking place.

### **16. REPRESENTATION**

The Receiving Party acknowledges that the Disclosing Party makes no representation or warranty as to the accuracy or completeness of any of the Confidential Information furnished by or on its behalf. Nothing in this clause operates to limit or exclude any liability for fraudulent misrepresentation.

### **17. ASSIGNMENT**

Neither this Agreement nor any of the rights, interests or obligations under this Agreement shall be assigned, in whole or in part, by operation of law or otherwise by any of the Parties without the prior written consent of each of the other Parties. Any purported assignment without such consent shall be void. Subject to the preceding sentences, this Agreement will be binding upon, inure to the benefit of, and be enforceable by, the Parties and their respective successors and assigns.

### **18. EMPLOYEES AND OTHERS**

Each Party shall advise its Representatives, contractors, subcontractors and licensees, and shall require its Affiliates to advise their Representatives, contractors, subcontractors and licensees, of the obligations of confidentiality and non-use under this Agreement, and shall be responsible for ensuring compliance by its and its Affiliates' Representatives, contractors, subcontractors and licensees with such obligations. In addition, each Party shall require all persons and entities who are not employees of a Party and who are provided access to the Confidential Information, to execute confidentiality or non-disclosure agreements containing provisions no less stringent than



those set forth in this Agreement. Each Party shall promptly notify the other Party in writing upon learning of any unauthorized disclosure or use of the Confidential Information by such persons or entities.

#### **19. NO LICENSE**

Nothing in this Agreement is intended to grant any rights to under any patent, copyright, or other intellectual property right of the Disclosing Party, nor will this Agreement grant the Receiving Party any rights in or to the Confidential Information of the Disclosing Party, except as expressly set forth in this Agreement.

#### **20. RELATIONSHIP BETWEEN PARTIES:**

Nothing in this Agreement or in any matter or any arrangement contemplated by it is intended to constitute a partnership, association, joint venture, fiduciary relationship or other cooperative entity between the parties for any purpose whatsoever. Neither party has any power or authority to bind the other party or impose any obligations on it and neither party shall purport to do so or hold itself out as capable of doing so.

#### **21. UNPULISHED PRICE SENSITIVE INFORMATION (UPSI)**

agrees and acknowledges that \_\_\_\_\_, its Partners, employees, representatives etc., by virtue of being associated with RailTel and being in frequent communication with RailTel and its employees, shall be deemed to be "Connected Persons" within the meaning of SEBI (Prohibition of Insider Trading) Regulations, 2015 and shall be bound by the said regulations while dealing with any confidential and/ or price sensitive information of RailTel. shall always and at all times comply with the obligations and restrictions contained in the said regulations. In terms of the said regulations \_\_\_\_\_ shall abide by the restriction on communication, providing or allowing access to any Unpublished Price Sensitive Information (UPSI) relating to RailTel as well as restriction on trading of its stock while holding such Unpublished Price Sensitive Information relating to RailTel

#### **22. MISCELLANEOUS.**

This Agreement constitutes the entire understanding among the Parties as to the Information and supersedes all prior discussions between them relating thereto. No amendment or modification of this Agreement shall be valid or binding on the Parties unless made in writing and signed on behalf of each Party by its authorized representative. The failure or delay of any Party to enforce at any time any provision of this Agreement shall not constitute a waiver of such Party's right thereafter to enforce each and every provision of this Agreement. In the event that any of the terms, conditions or provisions of this Agreement are held to be illegal, unenforceable or invalid by any court of competent jurisdiction, the remaining terms, conditions or provisions hereof shall remain in full force and effect. The rights, remedies and obligations set forth herein are in addition to, and not in substitution of, any rights, remedies or obligations which may be granted or imposed under law or in equity.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the date set forth above.

By Name:

RailTel Corporation India Limited:

Title:

By Name :

Witnesses:

Title:

**ANNEXURE 11****PRE -BID AGREEMENT**

(To be executed in presence of public notary on non-judicial stamp paper of the value of Rs. 100/-. The stamp paper has to be in the name of the BA)

This Pre-Bid Agreement (the “**Agreement**”) is made at New Delhi on this \_\_\_\_\_ Day of (month) 2022.

**BETWEEN**

**M/s. RailTel Corporation Of India Limited**, (CIN: L64202DL2000GOI107905) a company registered under the Companies Act 1956, having its registered and corporate office at Plate-A, 6<sup>th</sup> Floor, Office Block, Tower-2, East Kidwai Nagar, New Delhi India – 110 023 and Southern Regional office at 1-10-39 to 44, 6A, 6th Floor, Gumidelli Towers, Begumpet Airport Road, Opp. Shoppers Stop, Hyderabad-500 016 (hereinafter referred to as “**RailTel**” which expression shall, unless repugnant to the context or meaning thereof, be deemed to include its successors and permitted assigns) of the **FIRSTPART. AND M/s. XXXX**, (CIN: \_\_\_\_\_) a company registered under the Companies Act 1956, having its registered office at and its Corporate Office located at \_\_\_\_\_ (hereinafter referred to as “**XXXX**” which expression shall, unless repugnant to the context or meaning thereof, be deemed to include its successors and permitted assigns) of the **SECOND PART.**

RailTel and \_\_\_\_\_ shall be hereinafter individually referred to as “**Party**” And collectively as “**Parties**.”  
**”Whereas,**

A) RailTel is a "Mini Ratna (Category-I)" CPSU of Ministry of Railways, having exclusive right of way along Indian Railways and has created an OFC backbone and associated transport and network infrastructure to provide carrier class telecom services. RailTel has Unified License issued by DoT to provide a range of telecom services. RailTel also has two tier III certified data centres at Secunderabad and Gurugram. RailTel has created a slew of digital services like cloud, hosting, hosted Video Conferencing service, Aadhar Services, Content delivery platform, WIFI as a service etc. RailTel has strong capabilities in managing telecom infrastructure, MPLS network infrastructure, data centre services like as (Infrastructure as a Service) and PaaS (Platform as a Service).

B) \_\_\_\_\_ (DETAILS OF SECOND PART)

C) RailTel had floated an EOI No: \_dated\_\_\_\_\_ pursuant to the RFP floated by End Customer for “\_ for End Customer Organization for agreed Scope of Work”(hereinafter referred as “The said work/project/tender”), and subsequently, based on the offer submitted by M/s XXXX towards the RailTel’s EOI, M/s XXXX has been selected by RailTel as Business Associate for the said Project.

D) RailTel is in the process of participating in the tender issued by end customer, complete details of which have deliberately not been shared with XXXX and XXXX has waived its right to get the RFP document of end customer owing to confidentiality concern raised by the end customer. However, a limited scope of work on ‘need to know basis and as detailed in clause 1.7 below, which will be carried out by XXXX has been shared with XXXX and based on the representation of “XXXX” that “XXXX” has read the said limited Scope of Work and has understood the contents thereof and that “XXXX” has sufficient experience to execute the said limited and defined scope of work, the Parties have mutually decided to form a “Business association” wherein RailTel shall act as the “Bidder” and “XXXX” shall act as the “business associate” in terms of the said Tender and in accordance to the terms agreed hereunder;

E) RailTel shall submit Rupees YYYY as BG against pre integrity pact at the time of submission of bid as an Integrity Pact bank guarantee to end customer and accordingly "XXXX" shall submit Rupees ZZZZ as BG of pre integrity pact on back-to-back basis to RailTel before final submission of the said bid to end customer. **(This is applicable on cases to case basis as per KSEB requirement. May please read in conjunction of the current RFP.)**

F) Party hereby acknowledges that RailTel has received Rs. /- (Rs. \_\_\_\_\_) from M/s XXXX as per the Terms and conditions of EOI no. dated \_\_\_\_.

G) The Parties are thus entering into this Agreement to record the terms and conditions of their understanding and the matters connected therewith.

RailTel has agreed to extend all the necessary and required support to "XXXX" during the entire contract period.

**NOW, THEREFORE**, in consideration of the mutual covenants set forth herein it is hereby agreed by and between the Parties hereto as under:

### **1. SCOPE OF CO-OPERATION**

- 1.1. Parties have agreed to form a "business association" to co-operate with each other on an exclusive basis with respect to execution of the said Project.
- 1.2. It has been further agreed between the Parties that Parties shall not bid individually for the said Project nor shall they enter into any arrangement with other parties for the purpose of bidding for the said Project during the validity of this Agreement.
- 1.3. The Parties also agree that the terms of the said EOI for limited and defined scope of work along with the Corrigendum's issued thereafter shall apply mutatis-mutandis to this Agreement.
- 1.4. The Parties further agree that they shall, enter into a 'Definitive Agreement' containing elaborate terms and conditions, role and responsibilities and respective scope of work of this Agreement after declaration of RailTel as the successful bidder of the said Project.
- 1.5. RailTel shall submit the PBG amounting Rs. XXXXX, earnest money deposit / EMD declaration (whichever is applicable) and performance bank guarantee to **End customer** and accordingly "XXXX" shall submit to RailTel, BG amounting to Rs. \_\_\_\_\_ as the earnest money deposit. Further, XXXX shall also pay the performance bank guarantee in proportionate to the extent of its defined scope of work.
- 1.6. RailTel may further retain some portion of the work mentioned in the end organization's RFP, where RailTel has competence so that overall proposal becomes most winnable proposal.

XXXX agrees, undertakes and acknowledges that following shall be Scope of Work of XXXX out of the total project work.:

**2. Technical Terms – As per KSEB/RCIL document**

### **3. TERM AND TERMINATION**

- 3.1. This Agreement shall come into force as of the date of signing and shall continue to be in full force and effect till the complete discharge of all obligations, concerning the carrying out of the said Project, except terminated earlier by the Parties in terms of this Agreement or in terms of the said project, whichever is applicable.
- 3.2. This Agreement can be terminated by either Parties forthwith in the event of happening of the following events:
  - (a) End customer announces or notifies the cancellation of the said Project and / or withdrawing the said RFP.
  - (b) The receipt of an official communication that End customer chooses not to proceed with RailTel for the said Project or RailTel is not short listed by End customer.

(c) Material breach of any of the terms and conditions of this Agreement by either of the Parties and the same is not rectified by the defaulting Party beyond 15 (fifteen) days (or a reasonable time period as mentioned under the notice issued by the other Party) from the date of receipt of notice from the other Party to cure the said breach.

3.3. Parties agree and understand that as of the execution of this Agreement they are contractually bound and obligated to perform the services, obligations and the scope of work entrusted, should RailTel be declared as the successful bidder of the said Project. Any Party shall not withdraw its participation subsequent to execution of this Agreement, at any point in time except in case of material breach of any of the terms of the Agreement.

3.4. In case "XXXX" breach the terms of Agreement i.e. defaulting party in such case the balance unsupplied quantity or service shall be completed by RailTel i.e. non-defaulting party and cost for completion of that balance unsupplied quantity or service of such defaulting party shall be executed by RailTel at the risk and cost of such defaulting party.

#### **4. Liability:**

It is understood that the parties are entering into this pre-bid teaming agreement for requirement of submission of bid against the RFP floated by end customer for Implementation of Network Security System and Integration for end Customer Organization. Parties acknowledge and agree that "XXXX" shall be completely liable for the successful execution of this project, in relation to its defined scope of work (as detailed in clause 1.7 above), fully complying the end customer requirements. Accordingly, it is agreed that notwithstanding anything contained in the RFP document, "XXXX" shall be liable to RailTel with regard to its obligations and liability to complete the agreed and defined scope of work as detailed in clause 1.7 above.

#### **5. EXCLUSIVITY**

Parties agree to co-operate with each other for the purpose of the said Project on an exclusive basis with respect to applying for, submitting and execution of the said Project including providing of technical demo, proof of concept for the agreed and defined scope of work.

#### **6. PAYMENT TERMS**

The payment terms between the parties shall be only on receipt of payment from end customer.

#### **7. TAXES**

Parties agrees that they will comply with the Indian Income Tax Act in force from time to time and pay Indian Income Tax, as may be imposed / levied on them by the Indian - Income Tax Authorities, for the payments received by them for the Project under this agreement and any other taxes, cess, surcharge, etc. for their respective scope of works;

#### **8. INDEMNIFICATION**

8.1 Parties agree to and undertake to indemnify and hold each other, its officers, directors, agents and employees harmless, from and against any and all claims, demands, causes of action, losses, damages, costs and expenses (including attorney's reasonable fees, costs of investigation and defence) arising out of or resulting from any claim, action or other proceeding (including any proceeding by any of the indemnifying party's employees, agents or contractors) based upon:

- i. any breach or contravention of any of the terms, conditions, covenants of this Agreement by the Party;
- ii. Unethical business practices;
- iii. any acts or omission of the Party and/ or any of its employees, agents or contractors, and the liability for damages to property arising from or out of party operations in connection with the performance of this agreement;

- iv. any claim for taxes that might arise or be imposed due to this performance of Services hereunder;
- v. any representation or warranty or information furnished by the Party being found to be false;
- vi. Parties failure to pay all applicable compensation to its respective personnel;
- vii. death or personal injury to any person;
- viii. destruction or damage to any property by acts or omissions of either Party, its representatives or personnel;
- ix. any violation/non-compliance by the Party with any applicable laws governmental regulations or orders;
- x. any third-party liability;
- xi. improper handling or misuse of the Confidential Information of the Party(ies) by the Party

8.2 XXXX shall be liable to all risks and consequences (including the risk of payments) suffered in the performance of services under the Project and undertakes to indemnify RailTel from and against any non-payments (of RailTel's share payable to RailTel), recoveries and claim from End Customer or any other cost or losses incurred due to default/non-performance on part of XXXX.

## **9. COMPLIANCES TO STATUTORY OBLIGATIONS**

- 9.1. Parties shall also obtain and keep in place necessary insurance policies, Medclaim policies, group insurance schemes of adequate value to cover their workmen, supervisors, etc. with regard to any accidents, injury or the liability under the Employee Compensation Act.
- 9.2. Parties shall observe and be responsible for the compliance of all labour laws (including labour cess) as per government notifications and shall maintain necessary records for the same and shall submit the same to RailTel when so required.
- 9.3. Parties shall duly maintain all records / registers required to be maintained by them under various labour laws mentioned above and shall produce the same before the concerned Statutory Authorities whenever required and called upon to do so.

## **10. LEGAL STATUS**

This Agreement constitutes a contractual relationship and shall relate solely to the Project and shall not extend to other activities or be construed to create a corporation, body corporate, partnership or any other form of legal entity.

## **11. REPRESENTATIONS AND COVENANTS**

- 11.1. Each Party represents and warrants to the other Party as follows:
  - 11.1.1. That it has full capacity, power and authority and has obtained all requisite consents and approvals to, enter into and to observe and perform this Agreement and to consummate the transactions contemplated hereunder. Each of the Persons / personnel executing this Agreement on behalf of the each of the Parties have full capacity and authority to sign and execute this Agreement on behalf of the respective Parties;
  - 11.1.2. The execution, delivery and consummation of, and the performance by it, of this Agreement shall not conflict with, violate, result in or constitute a breach of or a default under, (a) any contract by which it or any of its assets or properties, are bound or affected, and/or (b) its constitutional documents;
  - 11.1.3. This Agreement constitutes its legal, valid and binding obligations, enforceable against it, in accordance with their terms under Applicable Statutory Law(s);
  - 11.1.4. It has the right, authority and title to execute this Agreement;

**12. SUBCONTRACTING BETWEEN PARTIES**

If a Party subcontracts certain supplies or services pertaining to its scope of work to the other party, then the resulting relationship between such parties shall be governed by a separate subcontract. This Agreement shall not in any way be affected thereby except as stated otherwise in this Agreement

**13. GOVERNING LAW AND JURISDICTION**

The construction, validity and performance of this Agreement shall be governed in all respects by the Laws of India. The Parties hereby submit to the exclusive jurisdiction of the Indian courts at Delhi only.

**14. GOOD FAITH NEGOTIATION AND DISPUTE RESOLUTION**

The parties shall, at the first instance, attempt to resolve through good faith negotiation and consultation, any difference, conflict or question arising between the parties hereto relating to or concerning or arising out of or in connection with this agreement, and such negotiation or consultation shall begin promptly after a Party has delivered to another Party a written request for such consultation.

In the event of any dispute, difference, conflict or question arising between the parties here to, relating to or concerning or arising out of or in connection with this agreement, is not settled through good faith negotiation or consultation, the same shall be referred to arbitration by a sole arbitrator.

The sole arbitrator shall be appointed by KSEB/RailTel out of the panel of independent arbitrators maintained by RailTel, having expertise in their respective domains. The seat and the venue of arbitration shall be New Delhi. The arbitration proceedings shall be in accordance with the provision of the Arbitration and Conciliation Act 1996 and any other statutory amendments or modifications thereof. The decision of arbitrator shall be final and binding on both parties. The arbitration proceedings shall be conducted in English Language. The fees and cost of arbitration shall be borne equally between the parties.

**15. FORCE MAJEURE**

“Force Majeure Event” shall mean any event beyond the reasonable control of the affected Party including acts of God, fires, earthquakes, strikes, pandemic, epidemics, lock down, and labour disputes, acts of war or terrorism, civil unrest, economic and financial sanctions, or acts or omissions of any Governmental Authority occurring on or after the Signature Date.

No Party shall be liable to the other if, and to the extent, that the performance or delay in performance of any of its obligations under this Agreement is prevented, restricted, delayed or interfered with, due to a Force Majeure Event. The Party affected by Force Majeure Event shall promptly inform the other Party in writing and shall furnish within 30 (thirty) days thereafter, sufficient proof of the occurrence and expected duration of such Force Majeure Event. The Party affected by Force Majeure Event shall also use all reasonable endeavours to mitigate the negative effects of such Force Majeure Event on such Party’s ability to perform its contractual obligations. In the event of a Force Majeure Event, the Parties shall immediately consult with each other in order to find an equitable solution and shall use all reasonable endeavours to minimise the consequences of such Force Majeure Event. The occurrence of a Force Majeure Event shall however, not relieve a Party of any obligation to pay any sum due under this Agreement prior to the occurrence of the Force Majeure Event. If the Force Majeure lasts for more than 6 (six) months, the Parties may mutually decide in writing on the future course of action with respect to this Agreement.

**16. INTELLECTUAL PROPERTY RIGHTS**

- 16.1. Each Party shall remain the sole owner of all industrial or intellectual property rights, Technical Data, Know-How, designs, specifications and the like, generated or acquired before the signature, or beyond the scope of this agreement.
- 16.2. Each Party shall remain the sole owner of all industrial or intellectual property rights, technical data, know-how, design specifications and the like generated solely by that Party during the course of the performance of this agreement and shall not be free to use it by the other party and if the other party uses that intellectual property rights prior permission shall be taken with paying necessary fees for such rights.
- 16.3. In case of joint development, the work-share and associated ownership of intellectual property of each Party shall be mutually agreed upon and defined in advance in the definitive agreement for the specific program. However, should any invention be jointly made by the Parties in the performance of this agreement, without neither Party being in a position to reasonably claim the ownership of said intellectual property right, the said right shall be jointly owned by the Parties and the corresponding measures of protection for both Parties of the said right as may be practicable shall be mutually agreed by both Parties and cost for such registration of such right shall be borne by the parties proportionately as per the ownership of the rights.
- 16.4 As on date, Parties confirm that there are no infringements of any Intellectual Property Rights of the products contemplated under this agreement, in accordance with the laws prevailing in the country.
- 16.5. The Parties undertake and confirm that the Technology / Knowhow / Design owned by each of them and intended to be put into use for execution of various Projects pursuant to this agreement has been originally developed by each of such Parties. The Parties are entitled to all the Intellectual Property Rights in Technology / Knowhow / Design intended to be put into use for execution of various Projects and no third-party Intellectual Property Rights have been put in to use either in their original or modified form without proper authorisation of such third party. The Parties further vouchsafes that the foregoing undertaking is actuated by truth and accuracy and no misrepresentation is being put into use for inducing each other to enter into this agreement.

**17. CONFIDENTIALITY**

- 17.1. During the term of this agreement, either party may receive or have access to technical information, as well as information about product plans and strategies, promotions, customers and related non-technical business information which the disclosing party considers to be confidential ("Confidential Information as per RFP tender document"). In the event Confidential Information is to be disclosed, the Confidential Information must be marked as confidential at the time of disclosure, or if disclosed orally but stated to be confidential, and be designated as confidential in writing by the disclosing party summarizing the Confidential Information disclosed and sent to the receiving party within thirty (30) days after such oral disclosure.
- 17.2. Confidential Information may be used by the receiving party only with respect to the performance of its obligations under this Agreement, and only by those employees of the receiving party and its subcontractors who have a need to know such information for purposes related to this Agreement, provided that such subcontractors have signed separate agreements containing substantially similar confidentiality provisions. The receiving party must protect the Confidential Information of the disclosing party by using the same degree of care to prevent the unauthorized use, dissemination or publication of such Confidential Information, as the receiving party uses to protect its own confidential information of like nature.
- 17.3. The obligations is not applicable to any information which is:
- 17.3.1. Already known by the receiving party prior to disclosure;

- 17.3.2. Publicly available through no fault of the receiving party;
- 17.3.3. Rightfully received from a third party without being responsible for its confidentiality;
- 17.3.4. Disclosed by the disclosing party to a third party without being responsible for its Confidentiality on such third party;
- 17.3.5. Independently developed by the receiving party prior to or independent of the disclosure;
- 17.3.6. Disclosed under operation of law;
- 17.3.7. Disclosed by the receiving party with the disclosing party's prior written approval.
- 17.4. XXXX agrees and acknowledges that XXXX, its Partners, employees, representatives etc. by virtue of being associated with RailTel and being in frequent communication with RailTel and its employees, shall be deemed to be "Connected Persons" within the meaning of SEBI (Prohibition of Insider Trading) Regulations, 2015 and shall be bound by the said regulations while dealing with any confidential and/ or price sensitive information of RailTel. XXXX shall always and at all times comply with the obligations and restrictions contained in the said regulations. In terms of the said regulations, XXXX shall abide by the restriction on communication, providing or allowing access to any Unpublished Price Sensitive Information (UPSI) relating to RailTel as well as restriction on trading of its stock while holding such Unpublished Price Sensitive Information relating to RailTel
- 17.5 Notwithstanding anything contained in this agreement, XXXX undertakes, agrees and acknowledges that being RailTel's Business Associate, XXXX shall maintain utmost confidentiality in relation to said Project. XXXX further, undertakes that any information relating to said Project which is or will be disclosed/ divulged by RailTel on need to know basis, will be received and treated by XXXX as strictly confidential and XXXX shall not, without the prior written consent of the RailTel or as expressly permitted herein, disclose or make available to any other person such information.

## 18. **NOTICES**

Notices, writings and other communications under this Agreement may be delivered by hand, by registered mail, by courier services or facsimile to the addresses as set out below:

To RailTel Corporation Of India Limited

To: RailTel Corporation of India Ltd

Attn: Executive Director / Southern Region

Address: 1-10-39 to 44, 6A, 6th Floor, Gumidelli Towers, Begumpet Airport Road, Opp. Shoppers Stop, Hyderabad-500016 No.: +91-40-27788000

To XXXX

To: XXXX

Kind Attn: \_\_\_\_\_ Address: \_\_\_\_\_ Mob. \_\_\_\_\_ No.: \_\_\_\_\_  
Email: \_\_\_\_\_

## 19. **AMENDMENT**

No amendment or modification or waiver of any provision of these presents, nor consent to any departure from the performance of any obligations contained herein, by any of the Parties hereto, shall in any event be valid and effective unless the same is in writing and signed by the Parties or their duly authorized representative especially empowered in this behalf and the same shall be effective only in respect of the specific instance and for the specific purpose for which it is given.



**20. PRIOR UNDERSTANDING**

This Agreement contains the entire Agreement between the Parties to this Agreement with respect to the subject matter of the Agreement, is intended as a final expression of such Parties' agreement with respect to such terms as are included in this Agreement is intended as a complete and exclusive statement of the terms of such agreement, and supersedes all negotiations, stipulations, understanding, Agreements, representations and warranties if any, with respect to such subject matter, which precede or accompany the execution of this Agreement.

**21. GENERAL****21.1. Binding Effect:**

This Agreement shall be binding upon and inure to the benefit of the Parties here to and their respective legal successors.

**21.2. Counterpart:**

This Agreement may be executed simultaneously in 2 (two) counterparts, each of which shall be deemed to be original and all of which together shall constitute the same Agreement.

**21.3. Non-Partnership:**

21.3.1. This Agreement shall be on a principal-to-principal basis and shall not create any principal- agent relationship between the Parties.

21.3.2. Nothing in this Agreement shall be deemed to constitute a partnership or joint venture between the Parties or otherwise entitle either Party to have an authority to bind the other Party for any purpose.

**21.4. Severability:**

In the event any provision of this agreement is held invalid or un-enforceable by a court of competent jurisdiction, such provision shall be considered separately and such determination shall not invalidate the other provisions of this agreement and annexure/s which will be in full force and effect.

**21.5. Waiver:**

A failure by any Party to exercise or enforce any rights conferred upon it by this Agreement shall not be deemed to be a waiver of any such rights or operate so as to bar the exercise or enforcement thereof at any subsequent time.

**21.6. Time is of essence:**

Time is the essence of this agreement and the Parties herein agree and acknowledge to abide by the same.

**22. Miscellaneous**

22.1. No Party to this agreement will have any rights or obligations arising from or in relation to this agreement in excess of those rights and obligations expressly declared herein.

22.2. No Party to this agreement is entitled to sell, assign or otherwise transfer any of its rights and/or obligations arising from or in relation to this agreement to any third party, without the prior written consent of the other Party of this agreement.

- 22.3. Each Party shall be solely responsible for its own actions or failures to act and for its own commitments and undertakings. Neither Party shall present itself as the representative or agent of the other Party, nor shall it have the power or the authority to commit the other Party, unless it receives the other Party's prior written consent.
- 22.4. No release shall be made by any Party to the news media or the general public relating to this agreement and/or the subject matter thereof without prior written approval of the other Party.
- 22.5. During the term of this agreement, each party shall refrain from taking any action or attempt to take any action with the intent of impairing or causing prejudice to the business relationship, whether existing or prospective that subsists between the other party and its customers and business partners. Each party shall also desist from inducing or influencing or attempting to induce or influence any customer or business partner, whether existing or prospective of the other party, resulting into prejudice or detriment to business prospects of the other party.

Furthermore, Parties shall not compete with or cause detriment to the business prospects of each other by making use of confidential information, whether in its embodied or disembodied form, shared pursuant to this agreement.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year first above written.

For RailTel Corporation Of India Limited

For XXXX

Authorised Signatory

Authorized Signatory

Name:

Name

Designation:

Designation:

In Presence of witness

Signature:

Signature:

Name:

Name:

Address:

Address:

**Annexure 12****FORMAT FOR AFFIDAVIT TO BE UPLOADED BY BA ALONGWITH THE EOI****DOCUMENTS**

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs. 200/-The paper has to be in the name of the BA) \*\*

I \_\_\_\_\_ (Name and designation) \*\* appointed as the attorney/authorized signatory of the BA (including its constituents), M/s (hereinafter called the BA) for the purpose of the EOI documents for the work of \_\_\_\_\_ as per the EOI No.

of (RailTel Corporation of India Limited), do hereby solemnly affirm and state on the behalf of the BA including its constituents as under:

1. I/we the BA (s), am/are signing this document after carefully reading the contents.
2. I/we the BA(s) also accept all the conditions of the EOI and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the EOI documents from RailTel website [www.railtelindia.com](http://www.railtelindia.com). I/we have verified the content of the document from the website and there is no addition, no deletion or no alternation to be content of the EOI document. In case of any discrepancy noticed at any stage i.e., evaluation of EOI, execution of work or final payment of the contract, the master copy available with the RailTel Administration shall be final and binding upon me/us.
4. I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. I/we also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.
6. I/we declare that the information and documents submitted along with the EOI by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.
7. I/we undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of EOI, it shall lead to forfeiture of the EOI EMD besides banning of business for five years on entire RailTel. Further, I/we (insert name of the BA) \*\* and all my/our constituents understand that my/our constituents understand that my/our offer shall be EMD rejected.
8. I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of EMD/SD and Performance guarantee besides any other action provided in the contract including banning of business for five years on entire RailTel.

DEPONENT

VERIFICATION

SEAL AND SIGNATURE OF THE

I/We above named EOI do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT

Place:

Dated:

SEAL AND SIGNATURE OF THE BA

**\*\*The contents in Italics are only for guidance purpose. Details as appropriate, are to be filled in suitably by BA.**  
Attestation before Magistrate/Notary Public.

Signature of Bidder .....

Name: .....

Designation .....

Place: .....

Date: .....

Seal of BA Organization

# Request for Proposal (RFP) for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS Scheme

RFP No. CEIT/ITCSD/10/2024-25 dated 27.09.2024



KERALA STATE ELECTRICITY BOARD Ltd  
(Incorporated under the Indian Companies Act, 1956)  
Office of the Chief Engineer (IT, CR & CAPs)  
Vydyuthi Bhavanam, Pattom Thiruvananthapuram – 695 004  
Phone: (0471) 251 4654, 4610, 4502  
Email: [ceit@kseb.in](mailto:ceit@kseb.in) Website: [www.kseb.in](http://www.kseb.in)

## ABBREVIATIONS

Acronym	Definition
AAA	Authentication, Authorization, and Accounting
AP	Access Point
BoM	Bill of materials
BoQ	Bill of quantity
CA	Chartered accountant
CE	Chief Engineer
CPG	Contract Performance Guarantee
CR	Customer relations
DC	Data Centre
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DR	Data Recovery Centre
DSC	Digital Signature Certificate
EMD	earnest money deposit
GST	Goods and Services Tax
HA	high availability
HDPE	high-density polyethylene
RDSS	Revamped Distribution Sector Scheme
KSEBL	Kerala State Electricity Board Ltd
LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
LoA	Letter of Award
LOI	Letter of Intend
MOPS	Multiple Option Payment System
NTP	Network Time Protocol
OEM	Original equipment manufacturer
POE	Power over Ethernet
PVC	Polymerization of vinyl chloride
SLA	Service Level agreement
VLAN	Virtual LAN
VPN	Virtual private network

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## 1. LETTER OF INVITATION TO BIDDERS

Tender no.	E-Tender No. CEIT/ITCSD/10/2024-25 dated 27.09.2024
Name of the Organization	Kerala State Electricity Board Limited (KSEBL)
Title of Services	Request for Proposal (RFP) for Revamping of IT infrastructure in the Data Centre and DR Centre of KSEB under RDSS

Dear Sir/Madam,

Kerala State Electricity Board Limited (KSEBL) invites bid from competent Agency for carrying out the work of “Revamping of IT infrastructure in the Data Centre and DR Centre of KSEB under RDSS”.

Mode of Bid Submission	Online through e-Tendering system at <a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a> The details regarding the RFP process shall be available on the same. The eligible bidders should visit the website from time to time and get the status updates. All details uploaded on the website from time to time shall be deemed to have been provided to all the bidders.
The Purchaser’s contact details	Chief Engineer (IT, CR & CAPs) 8 <sup>th</sup> floor, Vydyuthi Bhavanam, Pattom, Thiruvananthapuram – 695 004, Kerala Phone: +91 471 2514610 Email: <a href="mailto:ceit@kseb.in">ceit@kseb.in</a> <i>Queries may be submitted to <a href="mailto:ceit@kseb.in">ceit@kseb.in</a></i>
Probable Amount of Contract (PAC)	Rs.37,00,00,000/- (Approx.) (Rupees Thirty Seven Crores)
Tender document fee (Non-refundable)	Rs.17,700/- (including GST)
Earnest Money Deposit	Rs.5,00,000 (by online - of India Multi Option Payment System (SBI MOPS Gateway) only Total amount has to be made as (Rs. 5,17,700/-) as a single payment through online payment (SBI MOPS Gateway)
Last date to send in requests for clarifications on the tender document	Refer <a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>
Date and Time for Pre- Bid Conference	Refer <a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>
Response to Pre-Bid Clarifications /Corrigendum	Refer <a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>
Last date for submission of Bids	<a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>

Opening of Pre-qualification Bids	<a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>
Opening of Technical Bids	Refer <a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>
Opening of commercial Bids	Refer <a href="https://etenders.kerala.gov.in/">https://etenders.kerala.gov.in/</a>

The prospective bidder should have the necessary competence, adequate financial standing, sufficient experience, expertise as per Qualification Requirements detailed in this document.

Before bidding under this bid, in order to avoid non-responsiveness of bid, bidder should ensure that:

1. They are qualified as per qualification criteria mentioned in this document
2. The offered product and solution meets the technical requirement laid down in this document.

Scope of Work is detailed out in the subsequent sections of the RFP

You are invited to submit your proposal as per the attached RFP document.

Yours sincerely,

Sd/-

Chief Engineer (IT, CR & CAPs),  
KSEBL

## 2. INTRODUCTION

### 2.1. ABOUT KSEBL

KSEB Ltd. is a company incorporated under the Companies Act, 1956 and is fully owned by the Government of Kerala [Hereinafter KSEBLtd. will be described as 'Purchaser']. It is the sole agency for Generation, Transmission and Distribution of Electricity within the State of Kerala. It is having an installed capacity to the tune of 2226.281 MW and is having a consumer base of 1.19 crores. Also it is having a span of 59946 Kms of HT lines and 285506 Kms of LT lines.

### 2.2. BACKGROUND OF THE PROJECT

KSEBL has a Data Centre of tier-III standards functioning at the Corporate HQ located at Vidyuthibhavanam, Pattom, Thiruvananthapuram, Kerala with a Server farm area of 1800 Sq.ft. and a rack capacity of 48 nos. of 42U racks. The Disaster Recovery Centre of KSEB is functioning at Infopark, Cherthala, Ernakulam in almost a similar replica of the Data Centre. Both of the above infrastructure were established as part of implementation of Part-A of RAPDRP in 2013. Since the IT infrastructure at DC and DR are becoming old and obsolete, revamping and up-gradation of the same has been included as a key initiative under the RDSS project funded by GoI. As part of the above, it is proposed to carry out the revamping of compute clusters, network infrastructure, storage, backup systems etc. in the Data Centre and DR Centre in accordance with the state of the art technologies and industry standards.

In order to achieve this goal, KSEBL is looking for a long-term engagement with a suitable partner (bidder) for the implementation and establishment of Infrastructure in the internal network of Data Centre and DR Centre with Server, Storage, software defined Network/virtualization, backup solutions etc.

### 3. INSTRUCTION TO BIDDERS

#### 3.1. COST OF BIDDING

- 3.1.1. The Bidder shall bear all costs associated with the preparation and submission of the Bid and any subsequent events/activities related to this Tender. The Purchaser will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

#### 3.2. LANGUAGE OF BID

- 3.2.1. The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in English. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Bid, such translation shall govern.

#### 3.3. CURRENCIES OF BID

- 3.3.1. Bidders may express their bid price in Indian Rupees only. Price Bid in any currency other than INR will be treated as non-responsive and hence will be rejected.

#### 3.4. BID PRICES

- 3.4.1. Unless otherwise specified in the Scope of Work, Bidders shall quote for the entire Services on a Single Responsibility such that the total Bid price covers all the obligations of the Bidder mentioned in or to be reasonably inferred from the Tender Document in respect of providing the product/services. This includes all requirements under the Bidders responsibilities for successful completion of the Project as per Scope of Work and, where so required by the Tender Document, as specified in the Tender Document, all in accordance with the requirements of the General Conditions of Contract and Special Conditions of Contract.
- 3.4.2. Bidders are required to quote the price for the technical, commercial and contractual obligations outlined in the Tender Document.
- 3.4.3. Bidders shall give a break-up of the prices in the manner and detail as asked for in the Price Bid form online in e-Procurement Portal failing which the Purchaser shall reserve the right to assume/extrapolate the prices for the item/services for which the price has not been quoted and the same will be binding on the Bidders. Responsibility for including all applicable taxes, duties and levies in the Bid lie with the Bidder and the Purchaser shall not be responsible for any error/omission on the part of the Bidder.
- 3.4.4. The taxes, duties and levies shall be indicated by the Bidder in the Price Bid form online in e-tender Portal shall be quoted. Variation in applicable tax rates shall be borne by the KSEBL.
- 3.4.5. The prices/rates quoted by the Bidder shall remain firm (fixed) during the entire Contract Period and shall not be subject to any escalation/variation on any account, unless otherwise explicitly provided. A Bid submitted with an adjustable/variable price quotation will be treated as non-responsive and hence will be rejected.

#### 3.5. PERFORMANCE BANK GUARANTEE

- 3.5.1. The successful Bidder shall furnish the performance security equal to 10% (Ten percent) of Total Contract Value after issue of LoA. The PBG should be only in form of a Bank Guarantee issued by any nationalized/scheduled bank within 15 calendar days of the receipt of notification of award (LoA) from the Purchaser. The Performance Bank Guarantee shall be in form of Bank Guarantee as per the format given in this RFP.

- 3.5.2. PBG shall remain valid for full contract period and with a claim period of another ninety (90) calendar days. No interest shall be paid by the Purchaser on the Bid Security deposited by the Bidder.
- 3.5.3. Failure of the successful Bidder to comply with the requirement of Clause 3.5.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD, in which event KSEBL may blacklist the successful bidder and award the contract to the next best value bidder or call for new proposals from the interested bidders.

### **3.6. BID VALIDITY**

- 3.6.1. Bids submitted by Bidders shall remain valid for acceptance for one hundred and eighty (180) calendar days from the next day of the last date of Bid submission. A Bid valid for a shorter period may be rejected by the Purchaser as being non-responsive.
- 3.6.2. In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the Bid validity period. The request and responses there to shall be made in writing. If a Bidder accepts to prolong the period of validity, the Bid Security shall also be suitably extended. A Bidder may refuse such request which will not lead to forfeiting its Bid Security. A Bidder granting the request will neither be required nor permitted to modify its Bid.

### **3.7. CONSORTIUM**

- 3.7.1. This bidding process is open to all the vendors who meet the eligibility criteria as per Section 6.
- 3.7.2. The Bid shall be submitted by only the sole Bidder; no consortium is allowed in this Bid.

### **3.8. AUTHORIZED SIGNATORY**

- 3.8.1. The bid must contain the name, address and place of business of the Bidder and must be digitally signed and sealed by the designated Authorized Representative of the Bidder. The name of such person should also be typed or printed below the signature.
- 3.8.2. Bids by corporation/ company must be signed by the Authorized representative of the Bidder with the legal name of the corporation/ company.
- 3.8.3. Satisfactory evidence of authority (Power of Attorney) of the person signing on behalf of the Bidder shall be furnished with the bid.
- 3.8.4. The Bidder's name stated on the proposal shall be exact legal name of the firm.
- 3.8.5. Bids not conforming to the above requirements of signing shall be disqualified.

### **3.9. ALTERNATIVE BIDS**

- 3.9.1. Alternative Price bids shall be rejected.

### **3.10. INVOLVEMENT OF SUB-CONTRACTOR (S)**

- 3.10.1. Where the Bidder expects to sub-contract a part of the specified Scope of Work, the same must be clearly stated in the Bid, describing the work to be sub-contracted, the reasons for sub-contracting and the details of the Sub-contractor, including previous work done by the Sub-contractor in similar area. If the Bidder had not envisaged involvement of any Sub-contractor while bidding, but desires to do so during project execution, the Bidder must first get this approved by the Purchaser in writing, giving necessary details.

### **3.11. BID PRICES AND DISCOUNT**

The prices quoted by the Bidder shall conform to the requirements specified below:

- 3.11.1. Prices quoted by the Bidder must be firm and final and shall remain constant throughout the period of the contract and shall not be subject to any upward revision.
- 3.11.2. If an item is required to complete the scope/services envisaged in this RFP not listed in the BoQ, price for the same shall be assumed to be included by the bidder in the prices of other items. Same item, as and when required, Bidder will provide "free of cost" to the Purchaser.
- 3.11.3. The bidders are advised not to indicate any separate discount. Discount, if any, should be accounted for in the quoted prices. Discount of any type, indicated separately will not be taken into account for evaluation purpose. However, in the event of such an offer, without considering the separate discount, is found to be the lowest, the Purchaser shall avail such discount at the time of award of contract.
- 3.11.4. Bidders should note that any conditional discount will not be considered.

### **3.12. CONTENTS OF TENDER DOCUMENT**

- 3.12.1. The product and services required, bidding procedures, contract terms, Technical Requirements and Functional Requirements are prescribed in the Tender Document. Bidders are expected to examine all instructions, terms & conditions, specifications, annexure, forms and other information in the Tender Document. Failure to furnish any or all information as required or submit a Bid not substantially responsive to the Tender Document in every respect will be at the Bidder's risk and may result in rejection of the Bid.

### **3.13. BIDDER TO OBTAIN HIS OWN INFORMATION**

- 3.13.1. The Bidder shall for all purposes deemed to have independently obtained all necessary information for the purpose of preparing his Bid. The correctness of the details given in the Tender Document is for guideline information only, to help the Bidder prepare his Bid. The Bidder shall be deemed to have visited the Site and familiarized themselves thoroughly with the site conditions before submitting the Bid. The cost of visiting the sites shall be borne by the Bidder. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not providing services in strict conformity with scope and special conditions of the contract.
- 3.13.2. The Bidder shall be deemed to have examined the Tender Document and to have obtained his own information in all matters whatsoever that might influence carrying out the proposal at the scheduled rates and satisfied himself to the sufficiency of his Bid. Any error in description or quantity or omission there from shall not vitiate the Contract or release the Bidder from executing the Project comprised in the Contract according to the Scope of Work and specifications at scheduled rates. He is deemed to know the scope, nature and magnitude of the work involved in the Project.
- 3.13.3. The Bidder shall be deemed to have visited the sites and offices, to have satisfied himself to the nature of all existing business processes and also as to the nature and the conditions of available facilities and communications and possible interruptions there to the access and egress from sites and to have made enquiries, examined satisfied himself of the sites in respect to requirements for executing the Project and to have made local independent enquiries on all matters affecting the Contract. Bidder is deemed to have acquainted himself his liability for payment of statutory taxes, duties, levies, customs and other charges.
- 3.13.4. Any neglect or failure on part of the Bidder in obtaining necessary and reliable information or issues or any other matters affecting the Contract shall not relieve him from any risks or liabilities or the entire responsibility for executing the Contract at the scheduled rates and time in strict accordance with the Contract Agreement.
- 3.13.5. Any change in sites conditions or technological requirement shall be binding on the Bidder and no extra claim on this account shall be entertained.

3.13.6. The verbal agreement or inference from conversation with any employee of the Purchaser before, during or after the execution of the Contract Agreement shall not in any way affect or modify the terms and obligations herein contained.

#### **3.14. CLARIFICATION ON TENDER DOCUMENT**

- 3.14.1. Bidders requiring any clarification on the Tender Document may notify the Purchaser (at its postal/e-mail address given) in writing not later than two (2) calendar days before the date of pre-bid conference.
- 3.14.2. Except for responses to request for any clarifications on the Bid, the Bidder shall not contact the Purchaser by any means for any matter related to this Bid from the time of submission of the Bid until the Contract is awarded to and accepted by the Successful Bidder.
- 3.14.3. If deemed fit, written copies of the Purchaser's response (including explanation of queries without identifying its source) will be uploaded in e-procurement portal.

#### **3.15. AMENDMENT OF BIDDING DOCUMENT**

- 3.15.1. At any time prior to the deadline for submission of the Bids, Purchaser may modify the Tender Document by issue of an addendum/corrigendum.
- 3.15.2. In addition, Purchaser may issue addendum/corrigendum to the Tender Document to make/reflect amendment(s) in terms & condition or Scope of Work specified in this Tender Document.
- 3.15.3. Any such addendum/corrigendum will be made available at the e-tender website (<https://etenders.kerala.gov.in>). No separate other communication in this regard shall be made with any Bidder. It will be the responsibility of the Bidder to regularly visit the website to keep themselves updated on such changes.
- 3.15.4. No clarification obtained through verbal communication by the Bidders from any officer, agent or employee of the Purchaser or any staff of the Project Management Agency will be deemed as addendum/corrigendum to the Tender document.
- 3.15.5. The purchaser, at its discretion for any reason whether at its own initiative or in response to a clarification requested by a bidder may add, modify or remove any element of the Items (including hardware, software, networking etc.) or any component of Related Service entirely or any part thereof from the bid document till the deadline for submission of the Bids.
- 3.15.6. In order to provide Bidders reasonable time to take the addendum/corrigendum into account in preparing their bids, the Purchaser may, at its own discretion, extend the last date of Bid submission. In such an event, Bidders shall not be entitled to any compensation, in any form whatsoever.

#### **3.16. INSTRUCTION FOR BID PREPARATION**

- 3.16.1. The Bidders are advised to upload their Bids complete in all respect in the e-tender website. The Bidder shall upload a comprehensive list of attached forms/declarations/certificates etc. in response to Tender Document.

#### **3.17. GENERAL TENDER TERMS & CONDITIONS FOR E-PROCUREMENT**

This is an e-Tender and is being published online. The tender is invited in two cover system from the registered and eligible firms through e-procurement portal of Government of Kerala (<https://www.etenders.kerala.gov.in>). Prospective bidders willing to participate in this tender shall necessarily register themselves with above mentioned e-procurement portal.



The tender timeline is available in the critical date section of this tender published in [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in).

#### 3.17.1. Online Bidder registration process:

Bidders should have a Class II or above Digital Signature Certificate (DSC) to be procured from any Registration Authorities (RA) under the Certifying Agency of India. Details of RAs will be available on [www.cca.gov.in](http://www.cca.gov.in). Once, the DSC is obtained, bidders have to register on [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) website for participating in this tender. Website registration is a one-time process without any registration fees. However, bidders have to procure DSC at their own cost.

Bidders may contact e-Procurement support desk of Kerala State IT Mission over telephone at 0471-2577088/188/388 or 0484-2336006, 2332262 or 0497-2764788, 2764188 or 0483-273294 or through email: [etendershelp@kerala.gov.in](mailto:etendershelp@kerala.gov.in) or [helpetender@gmail.com](mailto:helpetender@gmail.com) for assistance in this regard.

#### 3.17.2. Online Tender Process:

The tender process shall consist of the following stages:

- a) Downloading of tender document: Tender document will be available for free download on [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in). However, tender document fees shall be payable at the time of bid submission as stipulated in this tender document.
- b) Publishing of Corrigendum: All corrigenda shall be published on [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) and shall not be available elsewhere.
- c) Bid submission: Bidders have to submit their bids along with supporting documents to support their eligibility, as required in this tender document on [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in). No manual submission of bid is allowed and manual bids shall not be accepted under any circumstances.
- d) Opening of Technical Bid and Bidder short-listing: The technical bids will be opened, evaluated and shortlisted as per the eligibility and technical qualifications. All documents in support of technical qualifications shall be submitted (online). Failure to submit the documents online will attract disqualification. Bids shortlisted by this process will be taken up for opening the financial bid.
- e) Opening of Financial Bids: Bids of the qualified bidder's shall only be considered for opening and evaluation of the financial bid on the date and time mentioned in critical date's section.

#### 3.17.3. Documents Comprising Bid:

- a) **The First Stage** (Pre-Qualification and Technical Cover):

Pre-Qualification or Technical proposal shall contain the scanned copies of the all the forms and supporting document including the technical proposal.

The department doesn't take any responsibility for any technical snag or failure that has taken place during document upload.

#### **Cover I- (Fee cover)**

- The copy of agreement as per Appendix –D of the RFP in Kerala Stamp Paper worth Rs.200/-

#### **Cover II – (Technical Cover)**

- Signed tender document
- Scanned copy of all proof of documents/certificates of eligibility criteria/evaluation documents as mentioned in the RFP as a single pdf.
- Comprehensive technical proposal, complete specifications of the quoted products as a single pdf.
- All other document mentioned elsewhere in the bid as a single pdf.

Bidders shall take special care to ensure that the scanned copy of all uploaded documents shall be clear & legible. Furnishing multiple copies of documents like Purchase Order etc. shall be avoided.

**b) The Second Stage (Financial Cover)**

The Bidder shall complete the Price bid as per format given for download along with this tender.

Note: The blank price bid should be downloaded and saved on bidder's computer without changing file-name otherwise price bid will not get uploaded. The bidder should fill in the details in the same file and upload the same back to the website.

**Cover-III- Price Bid (Part - III):**

- BOQ (Price Bid)
- Scanned copy of Bid form (Section 8.1) in Kerala Stamp Paper worth Rs.200/-.

**3.17.4. Tender Document Fees and Earnest Money Deposit (EMD)**

The Bidder shall pay, a tender document fees and Earnest Money Deposit as specified in the NIT. The EMD is required to protect the purchaser against risk of Bidder's conduct, which would warrant the forfeiture of security.

Online Payment modes: The tender document fees and EMD can be paid in the following manner through e-Payment facility provided by the e-Procurement system. State Bank of India Multi Option Payment System (SBI MOPS Gateway): Bidders are required to avail Internet Banking Facility in any of below banks for making tender remittances in eProcurement System.

**A) Internet Banking Options (Retail)**

1 Allahabad Bank	32 Kotak Mahindra Bank
2 Axis Bank	33 Lakshmi Vilas Bank
3 Andhra Bank	34 Mehsana Urban Co-op Bank
4 Bandan Bank	35 NKGSB Co-operative Bank
5 Bank of Bahrain and Kuwait	36 Oriental Bank of Commerce
6 Bank of Baroda	37 Punjab and Maharashtra Cooperative Bank
7 Bank of India	38 Punjab National Bank
8 Bank of Maharashtra	39 Punjab and Sind Bank
9 Bassein Catholic Co-operative Bank	40 RBL Bank
10 BNP Paribas	41 Saraswat Cooperative Bank
11 Canara Bank	42 ShamraoVithal Cooperative Bank
12 Catholic Syrian Bank	43 South Indian Bank
13 Central Bank of India	44 Standard Chartered Bank

- |                         |   |
|-------------------------|---|
| 14 City Union Bank      | 45 State Bank of India                              |
| 15 Corporation Bank     | 46 Syndicate Bank                                   |
| 16 Cosmos Bank          | 47 Tamilnad Mercantile Bank                         |
| 17 DCB Bank             | 48 Tamilnadu Cooperative Bank                       |
| 18 Dena Bank            | 49 The Kalyan Janata Sahakari Bank                  |
| 19 Deutsche Bank        | 50 TJSB Bank (Erstwhile Thane Janata Sahakari Bank) |
| 20 Dhanalaxmi Bank      | 51 UCO Bank   |
| 21 Federal Bank         | 52 Union Bank of India                              |
| 22 HDFC Bank            | 53 United Bank of India                             |
| 23 ICICI Bank           | 54 Vijaya Bank                                      |
| 24 IDBI Bank            | 55 YES Bank   |
| 25 Indian Bank          |   |
| 26 Indian Overseas Bank |   |
| 27 IndusInd Bank        |   |
| 28 Jammu & Kashmir Bank |   |
| 29 Janata Sahakari Bank |   |
| 30 Karnataka Bank       |   |
| 31 Karur Vysya Bank     |   |

**B) Internet Banking Options (Corporate)**

- |                            |                                      |
|----------------------------|--------------------------------------|
| 1 Bank of Baroda           | 21 Laxmi Vilas Bank                  |
| 2 Bank of India            | 22 Oriental Bank of Commerce         |
| 3 Bank of Maharashtra      | 23 Punjab & Maharashtra Coop Bank    |
| 4 BNP Paribas              | 24 Punjab & Sind Bank                |
| 5 Canara Bank              | 25 Punjab National Bank              |
| 6 Catholic Syrian Bank     | 26 RBL Bank                          |
| 7 City Union Bank          | 27 ShamraoViththal Co-operative Bank |
| 8 Corporation Bank         | 28 South Indian Bank                 |
| 9 Cosmos Bank              | 29 State Bank of India               |
| 10 Deutsche Bank           | 30 Syndicate Bank                    |
| 11 Development Credit Bank | 31 UCO Bank                          |
| 12 Dhanalaxmi Bank         | 32 Union Bank of India               |
| 13 Federal Bank            | 33 UPPCL                             |
| 14 HDFC Bank               | 34 Vijaya Bank                       |
| 15 ICICI Bank              | 35 Axis Bank                         |
| 16 Indian Overseas Bank    |                                      |
| 17 Janta Sahakari Bank     |                                      |
| 18 Jammu & Kashmir Bank    |                                      |
| 19 Karur Vysya Bank        |                                      |
| 20 Kotak Bank              |                                      |

During the online bid submission process, bidder shall select SBI MOPS option and submit the page, to view the Terms and Conditions page. On further submitting the same, the e-Procurement system will redirect the bidder to MOPS Gateway, where two options namely SBI and Other Banks<sup>1</sup> will be shown. Here, Bidder may proceed as per below:

- 1) SBI Account Holders shall click SBI option to with its Net Banking Facility., where bidder can enter their internet banking credentials and transfer the Tender Fee and EMD amount.
- 2) Other Bank Account Holders may click Other Banks option to view the bank selection page. Here, bidders can select from any of the 54 Banks to proceed with its Net Banking Facility, for remitting tender payments.

#### 3.17.5. Submission process:

For submission of bids, all interested bidders have to register online as explained above in this document. After registration, bidders shall submit their Technical bid and financial bid online on [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) along with online payment of tender document fees and EMD.

It is necessary to click on “Freeze bid” link/ icon to complete the process of bid submission otherwise the bid will not get submitted online and the same shall not be available for viewing/ opening during bid opening process.

#### 3.17.6. Authentication of Bid

The response bid shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. A letter of authorization shall be supported by a written power-of-attorney accompanying the bid. All pages of the bid, except for un-amended printed literature, shall be initialed and stamped by the person or persons signing the bid.

#### 3.17.7. Validation of interlineations in Bid

The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initiated by the person or persons signing the bid.

### 3.18. CORRUPT PRACTICE

3.18.1. The Purchaser requires bidders, SI, and contractors to observe the highest standard of ethics during the execution of such contracts.

3.18.2. The following definitions apply:

- Corrupt practice means the offering, giving receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any party in the procurement process or the execution of a contract.
- Fraudulent practice means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract.

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<sup>1</sup>Transaction Charges for Other Banks vide SBI Letter No. LHO/TVM/AC/2016-17/47 – 1% of transaction value subject to a minimum of Rs. 50/- and maximum of Rs. 150/-

Bidders who are using Other Banks option under SBI MOPS Payment Gateway, are advised by SBI to make online payment 72 hours in advance before tender closing time.

- Collusive practices means a scheme or arrangement between two or more bidders, with or without the knowledge of the KSEBL, designed to influence the action of any party in a procurement process or the execution of a contract.
- Coercive practices means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract;

3.18.3. The Purchaser will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent collusive or coercive practices in competing for the Contract.

3.18.4. The Purchaser will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in projects if it at any time determines that the Bidder has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, a KSEBL contract.

3.18.5. Furthermore, Bidders shall be aware of the provision stated in clause 4.6 Termination of Contract.

### **3.19. CONFLICT OF INTEREST**

3.19.1. Bidder shall hold KSEBL's interest paramount, without any consideration for future work and strictly avoid conflict with other assignment or their own corporate interest.

3.19.2. Bidder should not be engaged in any such business (excluding any work assigned to them by KSEBL) which has conflict of interest with the project for which the bids are being submitted.

3.19.3. KSEBL considers a conflict of interest to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations, and that such conflict of interest may contribute to or constitute a prohibited corrupt practice. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:

3.19.3.1. Receive or have received any direct or indirect subsidy from any of them; or have common controlling shareholders, or

3.19.3.2. Have the same legal representative for purposes of this Bid, or Have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or

3.19.3.3. Influence the decisions of the KSEBL regarding this bidding process, or

3.19.3.4. Bidder participates in more than one bid in this bidding process. Participation in more than one Bid will result in the disqualification of all Bids in which it is involved.

3.19.3.5. Bidder gets associated as a Consultant/Advisor/Third party independent evaluating agency with any of the agencies taking part in the bid process.

3.19.3.6. Bidders have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Employer, or that may reasonably be perceived as having this effect. Any such disclosure shall be made as per the Standard forms of technical proposal provided herewith. If the Bidder fails to disclose said situations and if the Employer comes to know about any such situation at any time, it may lead to the disqualification of the Bidder during bidding process or the termination of its Contract during execution of assignment.

### **3.20. UNFAIR ADVANTAGE**

3.20.1. If a Bidder could derive a competitive advantage from having provided IT Services/Assignment/Job related to the Assignment/Job in question and which is not defined as conflict of interest as per clause 3.17 above,

the Employer shall make available to all Bidders together with this RFP all information that would in that respect give such Bidder any competitive advantage over competing Bidders.

### **3.21. RIGHT OF PURCHASER TO ACCEPT OR REJECT BIDS**

- 3.21.1. The Purchaser reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.
- 3.21.2. The right to accept the Bids in response to this Tender Document will rest with the Purchaser. The Purchaser further does not bind himself to accept the Bid with highest Final Score and reserves the authority to reject any or all the Bids received without assigning any reason whatsoever.
- 3.21.3. The Purchaser reserves to himself the right to accept Bids in respect of all items, any one item or part of an item, and the acceptance thereof shall be deemed as sufficient notice of the exercise of such right. The Bid shall thereafter be for the quantity so accepted which will form the Contract.
- 3.21.4. Bid in which any of the particulars and prescribed information is missing or incomplete in any respect and/or prescribed conditions are not fulfilled are liable to be rejected. The decision of the Purchaser in respect of the above shall be final and binding on the Bidder.
- 3.21.5. Canvassing in connection with Bid is strictly prohibited. The submitted Bid of the Bidder who resorts to canvassing is liable to be rejected. Bid containing uncalled remarks or any additional conditions are liable to be rejected.
- 3.21.6. The Bid uploaded may be rejected in the following, but not limited to, circumstances:
  - 3.21.6.1. Any Bid received by the Purchaser after last date and time of Bid submission as stated in the Bid Datasheet, or
  - 3.21.6.2. Any Bid submitted in hardcopy or fax or e-mail, or
  - 3.21.6.3. Any Bid mentioning deviations from the Scope of Work and terms & conditions as mentioned in this Tender Document, or
  - 3.21.6.4. Any Bid which does not have necessary information strictly in a prescribed formats (Forms or Annexure provided in the Tender Document), or
  - 3.21.6.5. Any Bid quoting prices for any or all the items in the format not strictly as per Price Bid (merging of prices of various items into one is not permitted), or
  - 3.21.6.6. Any Bid quoting prices in the currency other than Indian Rupee, or
  - 3.21.6.7. Any Bid not accompanied by proper authorization from OEM/Product Vendor allowing Implementation Partner to quote in response to this Tender Document, or
  - 3.21.6.8. Any Bid containing credentials which were found to be misleading/false based on verification by the Purchaser, or
  - 3.21.6.9. Any Bidder who conceals any material information or makes a wrong statement or misrepresents facts or makes a misleading statement in the bid, in any manner whatsoever, in order to create circumstances for the acceptance of the bid, or
  - 3.21.6.10. Any Bidder who found to have indulged in any corrupt or fraudulent practice or in any practice, which is not in conformity with the highest ethical standards.
- 3.21.7. Apart from above, the Purchaser reserves the right to reject any or all Bids without citing any reason if deemed in the best interest of the Purchaser to do so.

### **3.22. BID EVALUATION**

- 3.22.1. Confidentiality

- 3.22.1.1. Information relating to the examination, evaluation, comparison, and post qualification of Bids, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process.
- 3.22.1.2. Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post qualification of the Bids or Contract award decisions may result in the rejection of its Bid.
- 3.22.2. Clarification of Bids
  - 3.22.2.1. During bid evaluation, KSEBL may, at its discretion and if so required, ask the bidders for any clarification in support of their compliance to stipulated Qualifying Requirements or any other matter related to its bid. The request for clarification required from the bidder and the response there to shall be in writing and shall be delivered by email/fax.
  - 3.22.2.2. No change in the price or substance of the Bid shall be sought, offered or permitted except to confirm the correction of arithmetical errors discovered by the Purchaser in the evaluation of the Bids.
- 3.22.3. Determination of responsiveness
  - 3.22.3.1. The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required securities have been furnished, whether power of attorney of signatory of the bid has been submitted, whether the documents have been properly signed and whether the bids are generally in order and substantially responsive to the requirements of the bidding documents.
  - 3.22.3.2. Any material information/data/document required to be submitted by the bidders as per provisions of bidding documents, if not submitted by the bidder, may render the bid to be non-responsive provided such information/data/documents is such that it may adversely affect the evaluation.
  - 3.22.3.3. The Purchaser may waive any minor infirmity, non-conformity or irregularity in a bid that does not constitute a material deviation, and that does not prejudice or affect the relative ranking of any bidder, as a result of the technical and commercial evaluation.
  - 3.22.3.4. If a bid is not substantially responsive to the requirements of the bidding documents, it may be rejected by KSEBL and the same cannot subsequently be made responsive by the bidder by correction.
- 3.22.4. Correction of arithmetical errors in price bid
  - 3.22.4.1. Arithmetical errors will be corrected at the time of evaluation of Price bid and the corrected figure will be considered as evaluated bid price. The corrections in the bid price shall be done as per the provisions of this clause and shall be binding on the bidder. If the bidder does not accept the correction of errors as per the provisions of this clause, his/her bid will be rejected and the bid security will be forfeited.
  - 3.22.4.2. If there is a discrepancy between the product of unit price and quantity and the total price, the product of unit price and quantity will prevail and the total price will be corrected. If there is discrepancy between summation of subtotals and total price, the summation of subtotal price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figure, the amount in words will prevail. In case unit price or quantity or both are not filled in against any item, it will be treated as zero and will be assumed that the Bidder has absorbed the cost elsewhere in the Price Bid.
- 3.22.5. **Pre-qualification and Technical Evaluation of the Bidders**
  - 3.22.5.1. Qualification Requirement- Each bid shall be evaluated to ascertain the qualification of bidder with respect to the requirements laid down in this RFP.
  - 3.22.5.2. Availability for No-Deviation Certificate. If any deviation is found, the bid shall be declared as non-responsive.
  - 3.22.5.3. Technical details and proposals submitted by the bidders shall be critically examined in line with objectives & scope of work mainly but not limited to the following criteria:



- 3.22.5.3.1. Schematic diagram showing all the modules & components of the systems covered in the specification and integration with existing systems.
- 3.22.5.3.2. Description of the technical solution for achieving the integrations as shown in the above schematic diagram.
- 3.22.5.3.3. Compliance to the Technical Specifications.
- 3.22.5.3.4. Compliance to the proposed solution as per the RFP along with the equipment OEM & Model and Versions.
- 3.22.5.3.5. Adherence with the time period as per schedule of deliveries defined in the RFP along with the work break down schedule.

**Note:** As part of the Pre-Qualification and Technical Evaluation, bidders are required to carry out a technical presentation of the proposed solution and quoted products at KSEB Headquarters. Accordingly, the shortlisted bidders will be communicated the date and time of the technical presentation.

### **3.22.6. Financial Bid Evaluation**

- 3.22.6.1. Only those Bidders who qualify the Qualification Requirements shall be considered for Financial (Price Bid) evaluation.
- 3.22.6.2. The Financial Bids which are opened shall be evaluated and the bidders whose total quote is the lowest shall be ranked as L1 bidder.
- 3.22.6.3. The Purchaser will correct arithmetical errors during evaluation of Financial Bids.
- 3.22.6.4. Except as provided in clauses 3.22.4 herein above, Tendering Authority shall reject the Price Proposal if the same contains any other computational or arithmetic discrepancy or error.
- 3.22.6.5. The bids will be evaluated and awarded as per the evaluation criteria that "The Bidders having lowest financial quote during Financial Bid Evaluation shall be considered as the L1 Bidders".

### **3.23. AWARD OF CONTRACT**

- 3.23.1. The Purchaser will award the Contract to the successful bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid as per the evaluation methodology of this document provided further that the bidder is determined to be qualified to perform the Contract satisfactorily. The Purchaser shall be the sole judge in this regard.
- 3.23.2. For the purpose of determining the capability and capacity of the bidder to perform the Contract, the Purchaser reserves the right to verify the authenticity of the documents submitted by the bidder for meeting the qualification requirements and may undertake verification of the manufacturing facilities available with the bidder
- 3.23.3. After approval of bid evaluation by KSEBL, the successful bidder may be invited for pre-award discussions. After pre-award discussions and prior to the expiry of the period of bid validity, KSEBL will notify the successful bidder in writing by registered letter or by email or fax that his/her bid has been accepted. This letter (hereinafter and in the Conditions of Contract called 'Letter of Intent' or LoI) shall name the sum which KSEBL will pay to the Contractor in consideration of the execution and completion of the scope of work by the successful bidder as prescribed under this tender document.
- 3.23.4. Within seven (7) days of receipt of the LoA, the successful bidder shall sign and return one (1) copy of the same to KSEBL as acknowledgment of acceptance of the same.
- 3.23.5. Within fourteen (14) Days of receipt of LoA the Successful Bidder shall submit the Performance Bank Guarantee (10% of Contract Value) and Also the Contract Copy. If the Successful Bidder fails to sign the Contract Agreement within the specified time limit, the Bid Security(EMD) will be forfeited and the Purchaser will have right to cancel the LoI .



- 3.23.6. After the submission of the PBG and Contract Copy KSEBL will Issue the Detailed Work Award to the Preferred Bidder.
- 3.23.7. If the bidder conceals any material information or makes a wrong statement or misrepresents facts or makes a misleading statement in the bid, in any manner whatsoever, in order to create circumstances for the acceptance of the bid, the purchaser reserves the right to reject such bid and/or cancel the Lol, if issued.

## 4. TERMS AND CONDITIONS

The Terms and Conditions of the contract shall prevail and shall be binding on the Agency and any change or variation expressed or impressed howsoever made shall be in operative unless expressly sanction by the KSEBL. The Bidder shall be deemed to have fully informed himself and to have specific knowledge of the provisions under terms and Conditions of this Tender Document mentioned hereunder:

### 4.1. DEFINITION OF TERMS

- 4.1.1. In constructing these general conditions and the annexed specification, the following words shall have the meaning here in assigned to them unless there is anything in the subject of context in consistent with such construction. KSEBL shall mean the KERALA STATE ELECTRICITY BOARD LIMITED or KSEBL or Purchaser, represented by Chief Engineer (IT, CR& CAPs) and shall include their legal personal representative, successors and assignees.
- 4.1.2. Bidder may be specified as a 'company' or a Joint Venture of 'companies'
- 4.1.3. The “Agency / Contractor / successful bidder” shall mean the Bidder whose Bid has been accepted by KSEBL and shall include its heirs, legal representative, successors and assignees approved by the KSEBL.
- 4.1.4. The “Chief Engineer (IT, CR & CAPs)” shall mean the Chief Engineer (IT, CR& CAPs), KSEBL.

### 4.2. CONTRACT

After the selection of successful bidder KSEBL will issue two separate work order. The two separate bank guarantee and contract has to be executed by the successful bidder.

### 4.3. CONTRACT VALUE

Contract Value shall be termed as total order value as quoted / accepted by the Successful Bidder in the Financial Bid.

### 4.4. CONTRACT PERIOD

The contract period shall be initially for a period of sixty-six months (6 months project completion and 60 months onsite warranty period) from the date of commencement of installation, which includes six months implementation period and sixty months for onsite warranty period. The warranty period may further be extendable for further two years as per the rate quoted.

### 4.5. IMPLEMENTATION PERIOD

The implementation period of project for shall as defined in this document where in all the hardware, software, resources etc. should be installed/deployed by the bidder. The implementation period for this project shall be maximum six (6) months from the date of LOA.

### 4.6. FALL BACK ARRANGEMENT

- 4.6.1. In the event of failure of the Agency to fulfill its obligations, duties and responsibilities as per the terms & conditions of the Contract, KSEBL shall have the right, at any time to resort to fall back arrangement. Under such arrangement, KSEBL shall take charge of all facilities and systems whether in operation or under

execution after giving suitable notice as provided in the Contract and can recover from the BGs & other holding of agency with utility, the losses suffered due to such failure. If the BGs & other holding of agency is insufficient, the Agency shall pay the difference to KSEBL failing which KSEBL shall have right to recover the sum through legal or other means.

- 4.6.2. KSEBL shall have the right in such circumstances to manage the system itself after taking charge of the facilities as above or through any other agency as it may deem fit and no claim of Agency for compensation in this respect shall be entered.
- 4.6.3. KSEBL shall have the right in such circumstances to blacklist/bar/disqualify the Agency from submission of Bid to the any Discom(s) at least for three years.

#### **4.7. HANDING OVER ON TERMINATION/ PROJECT COMPLETION:**

- 4.7.1. The Contract shall require the Agency to cooperate in handing back the facilities to KSEBL after termination of Contract/Project Completion.
- 4.7.2. In the event of termination or expiry of contract, the bidder shall be responsible for the transition activities to be completed across a transition period of as decided by utility (within the contract period). These activities shall also be applicable in case of reduction in scope of services if applicable. The successful bidder shall provide knowledge transfer to operations team through training sessions, workshop, discussion sessions and response to queries. The bidder should ensure that its team has handed over administration rights/passwords to the new operations team and KSEBL IT team.
- 4.7.3. In case KSEBL observes the lack of willingness to manage transitions / sharing of information or lack of support from Service Provider end (selected through this RFP), KSEBL shall have absolute discretion to levy severe penalties and deduct the amount from performance bank guarantee.

#### **4.8. PERFORMANCE BANK GUARANTEE**

- 4.8.1. Bidder has to furnish bank guarantee as performance security for the supplied equipments and services
- 4.8.2. A Performance Bank Guarantee equivalent to 10% (Ten Percent) of the respective Contract value shall be furnished by the Successful Bidder within 14 days of receipt of LOA from KSEBL. An unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of GCC. The said bank guarantee shall be initially valid up to ninety (90) days after expiry of the contract Period and shall be extended from time to time till ninety (90) days beyond the successful completion of the warranty period of 5 years.
- 4.8.3. The Bank guarantee in the prescribed format must be from the branch of any Nationalized/Scheduled Bank. The Agency may furnish Bank Guarantee on stamp paper of Kerala state and shall furnish a certificate of Banker that the stamp duty has been paid as per prevailing rules of that Kerala State.

#### **4.9. AGENCY TO INFORM HIMSELF FULLY**

The Contract shall be considered to have come into force from the date of its signing. The contractor shall be deemed to have carefully examined the Tender document including General Conditions, specifications and schedules. Also it shall deemed to have satisfied himself with the nature and character of the work to be executed and where necessary, of the site conditions and other relevant matters and details. Any information thus had or otherwise obtained from the KSEBL or the Engineer shall not in any way relieve the contractor from his responsibility for the supplying of the Infrastructure, hardware, software and other equipment and executing the work in terms of the contract including all details and incidental works and supply all accessories or apparatus which

may not have been specifically mentioned in the contract but necessary for ensuring complete erection and safe and efficient working of the equipment.

#### **4.10. CONTRACT DOCUMENTS**

- 4.10.1. The order placed under this Tender document shall be governed by the terms and conditions as incorporated in this Tender document and as given in the detailed work order. The terms and conditions as specified in this Tender document if differ from the terms indicated in the detailed work order the later shall prevail.
- 4.10.2. For all purposes, the contract will be construed as per the prevailing laws of India and in case of dispute, the civil courts at Thiruvananthapuram will have exclusive jurisdiction. For the due fulfillment of the contract, the Agency shall execute the Contract in the prescribed form, in prescribed number of copies on Kerala State Non-judicial stamp paper bearing stamp duty as applicable. The expenses of completing and stamping the Contract shall be borne by the Contractor. Such Contract shall be executed and signed by the authorized signatory of the Agency on each page thereof.
- 4.10.3. Such complete agreement form along with the contract documents together with a “Power of Attorney” in favour of the Executants shall be required to be submitted to the KSEBL within a period of 15 days from the receipt of order duly signed on each page. One copy of the executed agreement duly signed by the KSEBL shall be sent to the supplier for his reference.
- 4.10.4. The contract documents shall mean and include the following: -
  - 4.10.4.1. Contract agreement.
  - 4.10.4.2. Notice Inviting Tender
  - 4.10.4.3. Complete Tender document including its amendments if any.
  - 4.10.4.4. Bid submitted by bidder.
  - 4.10.4.5. BID SECURITY
  - 4.10.4.6. Letter of Intent and its acknowledgement
  - 4.10.4.7. Security Deposit/ Performance Guarantees.
  - 4.10.4.8. Detailed Work Order& its Annexure.
  - 4.10.4.9. Addenda that may hereafter be issued by the KSEBL to the Agency in the form of letter and covering letters and schedule of prices as agreed between the Agency and the KSEBL.
  - 4.10.4.10. The agreements to be entered as per Tender Document.
  - 4.10.4.11. Requisite Power of Attorney in favour of the authorized signatory of the Bidder.

#### **4.11. CHANGE OF AREA/QUANTITY**

- 4.11.1. Change of Quantity - Deleted
- 4.11.2. KSEBL reserves the right to increase or decrease the quantities of items as may be necessary, at the time of award of contract.

#### **4.12. GRAFTS AND COMMISSIONS ETC.**

- 4.12.1. Any gift, commission, or advantage given, promised or offered by or on behalf of the contractor or his partner, agent, officers, director, employee or servant or any one on his or their behalf in relation to the obtaining or to the execution of this or any other contract with the Utility, shall be, in addition to any criminal liability which it may incur, subject of any loss or damage to the utility resulting from any cancellation. The utility shall then be entitled to deduct the amount so payable from any moneys otherwise due to the Agency under the contract.

#### **4.13. SAFETY OF SYSTEM**

4.13.1. The Agency shall be fully responsible for upkeep, operation, maintenance, security and safety of infrastructure, hardware, software, documents, data and other documents and records transferred to it and developed later. These documents and records shall be maintained in updated condition and handed over back to KSEBL.

#### **4.14. LIABILITY FOR ACCIDENTS AND DAMAGES**

- 4.14.1. The Agency shall be liable for and shall indemnify the KSEBL in respect of any injury to person or damage to property resulting from the negligence of the Agency or his workman or from defective work or from any other acts related to this contract.
- 4.14.2. The Agency will indemnify and save harmless the KSEBL against all actions, suits, claims, demands, costs, or expenses arising in connection with injuries (other than such as may be attributable to the KSEBL or his employees) suffered prior to the date when the work shall have been taken over hereof by persons employed by the contractor on the work, whether at common law or under the workman's compensation Act-1923 or any other statute in force at the date of contract relating to the question of the liability of employees for injuries suffered by employees and will if called upon to do so take out the necessary policy or policies of insurances to cover such indemnity.
- 4.14.3. The Agency shall insure against such liabilities with an insurer approved by the KSEBL and shall continue such insurance, during the whole of the time that any person(s) are employed by him on the works and shall when required produce to the KSEBL, such policy of insurance and the receipt for payment of the current premium.

#### **4.15. MAINTENANCE OF FACILITIES AND PERSONNEL**

##### **PERSONNEL**

- 4.15.1. The Agency shall deploy exclusive supervisory and other personnel for efficient management of the work under contract. Apart from the personnel specified in the scope of work. However this contract is on service model, Agency shall be responsible for smooth & timely execution of work by appointing sufficient number of manpower.
- 4.15.2. Manager or an alternate shall be available for communication during 9 am to 7 pm.
- 4.15.3. Agency shall not change the Manager/nodal officer, provide that he has not left the service.
- 4.15.4. Contractor shall change the Manager/Nodal Officer with prior intimation to KSEB Ltd.
- 4.15.5. Agency shall issue identification cards (ID card) to all its personnel engaged in the work under the contract. The identification card duly signed by authorized signatory of managerial position of the contractor.

##### **NODAL OFFICER FOR EXECUTION OF PROJECT**

- 4.15.6. After award of contract, KSEBL shall appoint a Nodal Officer if required. Similarly, the Agency shall communicate the name of the authorize person(s) that would act as a Nodal Officer(s) from his side.

#### **4.16. CONTRACT AGREEMENT**

- 4.16.1. The Contract shall set out specific events of default by one party that will entitle the other party to terminate the Contract. The party committing an event of default, which is capable of being remedied, will be given a reasonable opportunity to remedy the default.

- 4.16.2. The Contract can however be otherwise terminated by either party by giving six-month notice and on terms to be mutually agreed which may include payment of suitable compensation for losses suffered by the other party due to such termination.
- 4.16.3. Agency shall indemnify KSEBL against any claims, demands, costs and expenses whatsoever which may be made against it, because of failure of the Agency or its representatives in the performance of their duties and negligence, any accident or injury to any person.

#### **4.17. LIQUIDATED DAMAGES AND PENALTY**

- 4.17.1. If the Supplier fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5% of the value of the Goods or Related Services, supplied beyond stipulated delivery schedule for each week or part thereof of delay until actual delivery or performance, subject to a maximum of 10% of value of such goods and services.
- 4.17.2. In addition, the Supplier is liable to the Purchaser for payment penalty as specified in the SLA.
- 4.17.3. If the Goods and Related Services supplied do not meet the minimum specifications as per the Contract, and the same is not replaced/modified by the Supplier to meet the requirements within 14 days of being informed by the Utility, the Utility shall be free to impose any penalty as deemed fit. In addition, the Utility shall reserve the right to terminate the contract and recover liquidated damages by forfeiting the performance guarantee submitted by the Purchaser.

#### **4.18. WARRANTY**

- 4.18.1. The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 4.18.2. Subject to GCC Clause, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 4.18.3. The onsite warranty/support shall remain valid for the period of five years from date of commissioning.
- 4.18.4. The Purchaser shall give Notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 4.18.5. Upon receipt of such Notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 4.18.6. If having been notified, the Supplier fails to remedy the defect within the period of warranty specified in the SCC; the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

#### **4.19. ADDITIONAL WARRANTY**

- 4.19.1. The agency shall be liable to provide additional two years warranty for all the equipment supplied under this RFP, if KSEB desires so at that point of time. The rate for the additional two years onsite warranty should be quoted as per BoQ, and the same shall be considered for price bid evaluation.

#### 4.20. TERMS OF PAYMENT

##### Revamping of IT infrastructure in the Data Centre & DR Centre

Activity	Payment Schedule	Milestones
Supply of IT infrastructure components at Data Centre and DR Centre	40% of the total project cost	Supply of items by Vendor and then purchaser confirmation that material is received as per the Work Order conditions
Installation, system integration and testing of IT infrastructure components	30% of the total project cost	On purchaser approval that system integration has been completed for supplied IT infrastructure components
Migration and go-live of the new IT infrastructure	30% of the total project cost	On purchaser approval for go-live of the new IT infrastructure components including hardware, software etc. in the Data Centre and DR Centre

#### 4.21. PROJECT SCHEDULE

##### Revamping of IT infrastructure in the Data Centre & DR Centre

SL No.	Activity	Timeline
1	Date of LOA	T0
2	Submission of reports on site survey, detailed design, man power deployment plan, migration plan, project schedule etc.	T0 + 2 Weeks
3	Supply of IT infrastructure components at Data Centre and DR Centre	T0 + 8 weeks
4	Installation, Configuration & system integration of all Active and Passive components at Data Centre and DR Centre	T0 + 16 weeks
5	Migration of WAN links, Internet links, SSO, Security components, Services, LDAP etc. to the newly setup IT infrastructure at Data Centre and DR Centre	T0 + 20 weeks
6	Acceptance Testing and Go-live of the revamped Data Centre and DR Centre	T0 + 24 weeks = T
7	Onsite warranty and support as per SLA	T + 5 years

#### **4.22. GOVERNING LAW AND DISPUTE RESOLUTION**

4.22.1. The agreement shall be governed by the laws of India. All disputes between the parties shall be resolved by way of mutual discussion. Any dispute remaining unresolved shall be subject to the exclusive jurisdiction of civil courts at Thiruvananthapuram.

#### **4.23. CONDUCT OF AGENCY STAFF**

4.23.1. If any of the Agency's employees shall, in the opinion of KSEBL, is guilty of any misconduct or incompetence or negligence, then if so directed by KSEBL, the Agency shall at once remove such employee and replace him by an equally qualified and competent substitute.

#### **4.24. LIEN**

4.24.1. In case of any lien or claim pertaining to the work and responsibility of the Agency for which KSEBL might become liable, it shall have right to recover such claim amount from the Agency.

#### **4.25. FORCE MAJEURE CONDITIONS**

4.25.1. If at any time during the currency of the Contract the performance in whole or in part be prevented or delayed by reason of any war hostility acts of public enemy, civil commotion, sabotage, fire floods, explosion, epidemics, quarantine restrictions, strikes, lockouts or acts of god (hereinafter referred to as Events) then provided Notice and adequate proof of the production/dispatch having suffered on account of these events is given within 21 days from the date of occurrence thereof the provision of penalty Clause of this specification shall not be invoked by KSEBL provided further that the deliveries under the contract shall be resumed, as soon as practicable after such event (s) has ceased to exist and the decision of the KSEBL as to whether the deliveries have been so resumed or not shall be final and conclusive provided further that in case the strike/lockout prolongs beyond a period of seven days, the supplier shall immediately inform about the same to the KSEBL in which case the KSEBL reserves the right to procure the material equipment on order or part thereof from any other source at the risk and cost of the supplier.

#### **4.26. COMPLETENESS OF CONTRACT**

4.26.1. The contract shall be considered completed on termination of the contract period after full handing over of data, documents or material and clearing all dues towards the contractor as specified in this document and certified by CE (IT, CR & CAPs).

#### **4.27. BANKRUPTCY**

4.27.1. If the Agency shall dissolve or commit any act or bankruptcy or being a corporation commence to be wound up except for reconstruction purpose or carry on hits, business under a receiver, the executors successors, or other representatives in law of the state of the Agency or any such receiver, Liquidator, or any persons to whom to the contract may become vested shall forth-with given notice thereof in writing to the KSEBL and shall for one (1) month during which he shall take all reasonable steps to prevent stoppage of the work have the option of carrying out the KSEBL subject to his or their providing such guarantee as may be required by the KSEBL but not exceeding the value of the work for the time being remaining relieve unexecuted provided however that nothing above said shall be deemed to relieve the Agency or his successors of his or other their obligations under the contract under any circumstances. In the event of stoppage of the work the period of the option under this clause shall be seven (7) days only. Provided that, should the above option be not



exercised, the contract may be terminated by the KSEBL by notice in writing to the Agency and the same power and provisions reserved to the KSEBL as mentioned in the Tender in the event of taking the work out of the Agency's hand's shall immediately become operative.

4.27.2. Change of name of the Agency at any stage after Bidding Process, the KSEBL shall deal the same as per prevailing rules of the KSEBL.

#### **4.28. GUARANTEE AND REPLACEMENT OF DEFECTIVE/DAMAGED MATERIAL**

##### **GUARANTEE**

The equipment's supplied should be guaranteed for their performance for the entire contract period. The equipment found defective within the above guarantee period shall be repaired/replaced by the supplier free of cost within one month of receipt of intimation.

##### **4.28.1. REPLACEMENT OF DEFECTIVE/DAMAGED MATERIALS**

If the whole or part of the materials are found to be defective/damaged or are not in conformity with the specification or sample, such defects or damages in the materials supplied shall be rectified within 15 days from the time of intimation of defect/damage either at the point of destination or at the supplier's works, at the cost of supplier, against proper security and acknowledgement. In the alternative, the defective or damaged materials shall be replaced free of cost within 15 days from the date of receipt of the intimation from the purchaser of such defects or damages.

#### **4.29. FAILURE TO EXECUTE THE CONTRACT**

4.29.1. Agency failing to execute the order placed on them to the satisfaction of KSEBL under terms and conditions set forth therein, will be liable to make good the loss sustained by the KSEBL, consequent to the placing of fresh orders elsewhere at higher rate, i.e. the difference between the price accepted in the contract already entered into and the price at which fresh orders have been placed. This is without prejudice to the imposition of Penalty/ Liquidated Damages and forfeiture of Performance Security.

#### **4.30. EFFECTIVE RECOVERIES**

4.30.1. Any loss, arising due to non-fulfillment of this contract or any other contract, will be recovered from the Performance Security held and or any other amount due to the Agency from the KSEBL from this Contract as well as from other contracts.

#### **4.31. LIMITATIONS OF LIABILITY**

4.31.1. The aggregate liability of the bidder to the Utility, whether under the contract or otherwise, shall not exceed 150% of the total Contract value, except in the case of irrecoverable data losses

#### **4.32. CYBER SECURITY COMPLIANCE**

4.32.1. The make/brand of the products quoted by the bidder should comply with the Government of India statutory guidelines related to industry standards, cyber security compliance etc.

#### **4.33. NON-DISCLOSURE AGREEMENT (NDA)**

4.33.1. The successful bidder shall execute a Non-Disclosure Agreement (NDA) in the prescribed format given in Annexure F.

## 5. SCOPE OF WORK

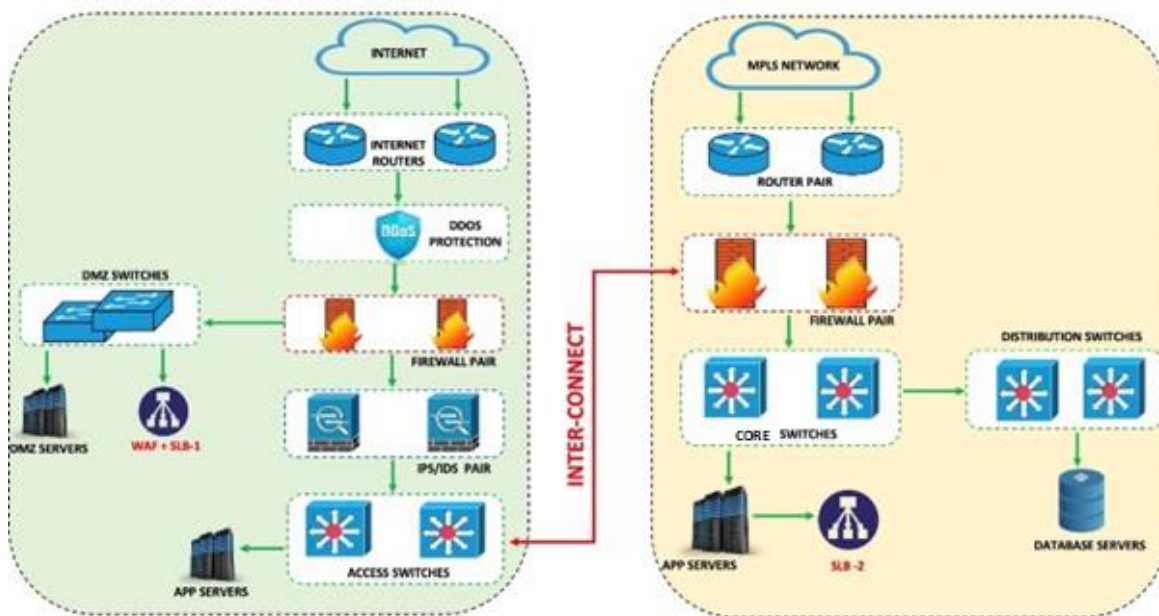
### 5.1. INTRODUCTION

The purpose of the RFP is for setting up a secure and dedicated IT infrastructure at KSEB Data Centre and DR Centre complying with tier-III standards by carrying out the revamping of the existing compute, network and storage hardware. The services shall be offered with predefined SLA and warranty support for five years. Ensuring business continuity and compliance for Information Security shall be the responsibility of the bidder.

In order to achieve this goal, KSEBL is looking for a long-term engagement with a suitable partner (bidder) for the implementation and establishment of IT Infrastructure over its internal network of DC and DR with Server, Storage, backup systems, software define Network/virtualization etc. for the organization.

#### 5.1.1. EXISTING ARCHITECTURE AT DATACENTRE

The following schematic describes the equipment housed in the Data Centre (DC), including routers, switches, firewalls, servers, SAN (Storage Area Network) storage, backup solutions, and other devices critical to the IT infrastructure. It provides a clear overview of the hardware components supporting the Data Centre's operations and their respective roles in the system.



The DR Centre located at Infopark, Cherthala is also having a similar architecture of IT infrastructure in terms of Servers, network equipment, security devices, Storage etc. The existing infrastructure at DC as well as DR is nearing obsolescence, especially the Servers, network equipments, Storage etc., pointing to the need for a revamping. Presently, a portion of the workloads are running on virtual machines (VMs)

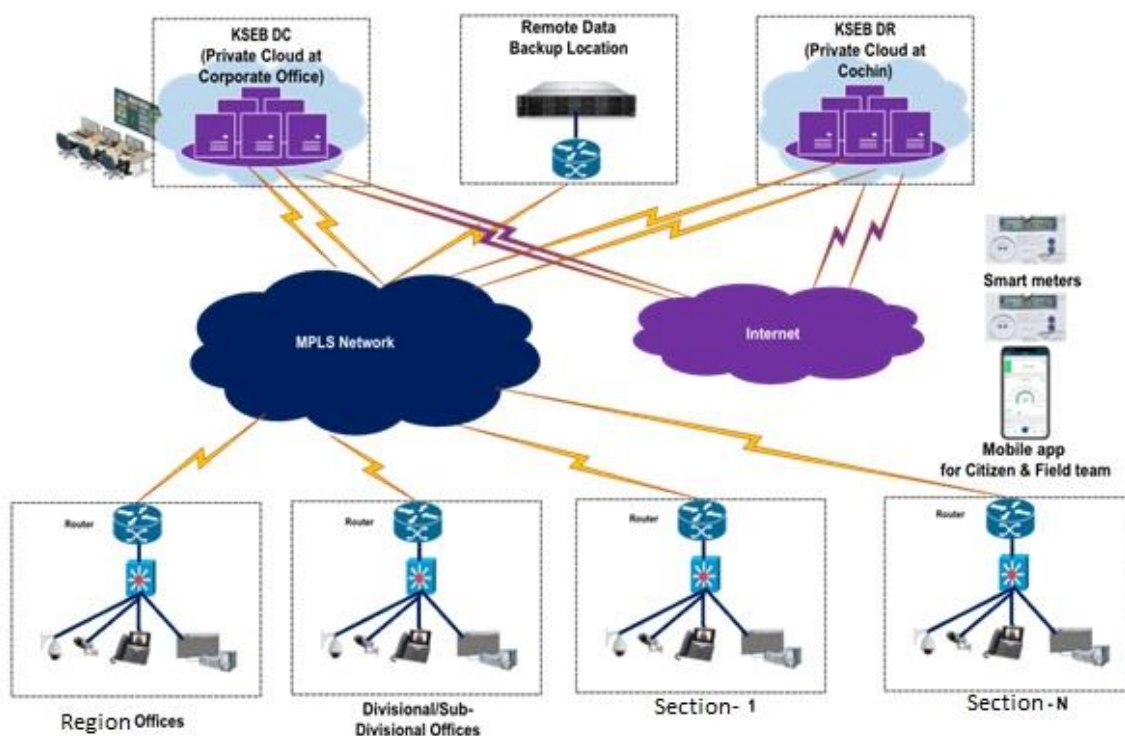
and containerized environments, and the remaining are running on stand alone Servers. As part of the revamping/upgrade process, the entire workload will be migrated to VM/Containerized clusters so as to ensure reliability, scalability and enhanced performance.

This modernization will be essential for improving the efficiency of the Data Centre, as it supports critical systems and applications running on 24x7 basis.

## 5.2. PROPOSED SOLUTION

### 5.2.1. PROPOSED OVERALL ARCHITECTURE

As mentioned in the project requirement, KSEBL need to revamp the existing infrastructure to host the current applications and also needs to augment to support the upcoming Applications of AMI, Data Analytics etc.



The following Business Function Requirements are to be met by the Data Centre and DR Centre Upgrade and Expansion

- 1) **Enhanced Performance and Capacity:** Increasing the Data Centre's capacity and performance to handle growing volumes of data and increasing demand for digital services. This might involve upgrading hardware and revamping network infrastructure.

- 2) **Improved Reliability and Redundancy:** Strengthening the data centre's resilience against potential disruptions, such as power outages, natural disasters, hardware failure or cyberattacks. This could involve investing in disaster recovery, redundant networking equipment, and geographically dispersed data storage.
- 3) **Enhanced Security:** Implementing advanced cybersecurity measures to protect sensitive data from unauthorized access, data breaches, and other security threats. This might include implementing advanced encryption protocols, enhancing access controls and utilising advanced network protocols.
- 4) **Scalability:** Designing the Data Centre infrastructure to be easily scalable to accommodate future growth and technological advancements. This could involve adopting modular architectures, virtualization technologies, and cloud integration strategies.
- 5) **Cost Efficiency:** Optimizing operational costs by improving energy efficiency, reducing maintenance overhead, and maximizing resource utilization. This might involve adopting green technologies, automating routine tasks and consolidating infrastructure resources to minimize wasted capacity.
- 6) **Supporting Innovation and Digital Transformation:** Providing a robust foundation for innovation and digital transformation initiatives. This could involve facilitating the adoption of emerging technologies such as artificial intelligence, Internet of Things (IoT), and big data analytics.
- 7) **Compliance and Regulatory Requirements:** Ensuring compliance with relevant data protection laws, cyber security guidelines, industry regulations, and international standards. This might involve implementing data governance frameworks, conducting regular audits, and maintaining comprehensive documentation of data handling practices.
- 8) **Disaster Recovery and Business Continuity:** Developing and implementing robust disaster recovery and business continuity plans to minimize downtime and data loss in the event of a catastrophic failure or unforeseen incident. This might involve implementing off-site backups, redundant data replication, and failover mechanisms to ensure rapid recovery and uninterrupted service delivery.
- 9) **Supporting Economic Growth and Competitiveness:** Contributing to the country's economic growth and global competitiveness by providing a reliable and high-performance digital infrastructure that attracts investment, fosters innovation, and enables businesses to thrive in the digital economy.

## 5.2.2. PROPOSED SOLUTION COMPONENTS AT DATA CENTRE AND DR CENTRE

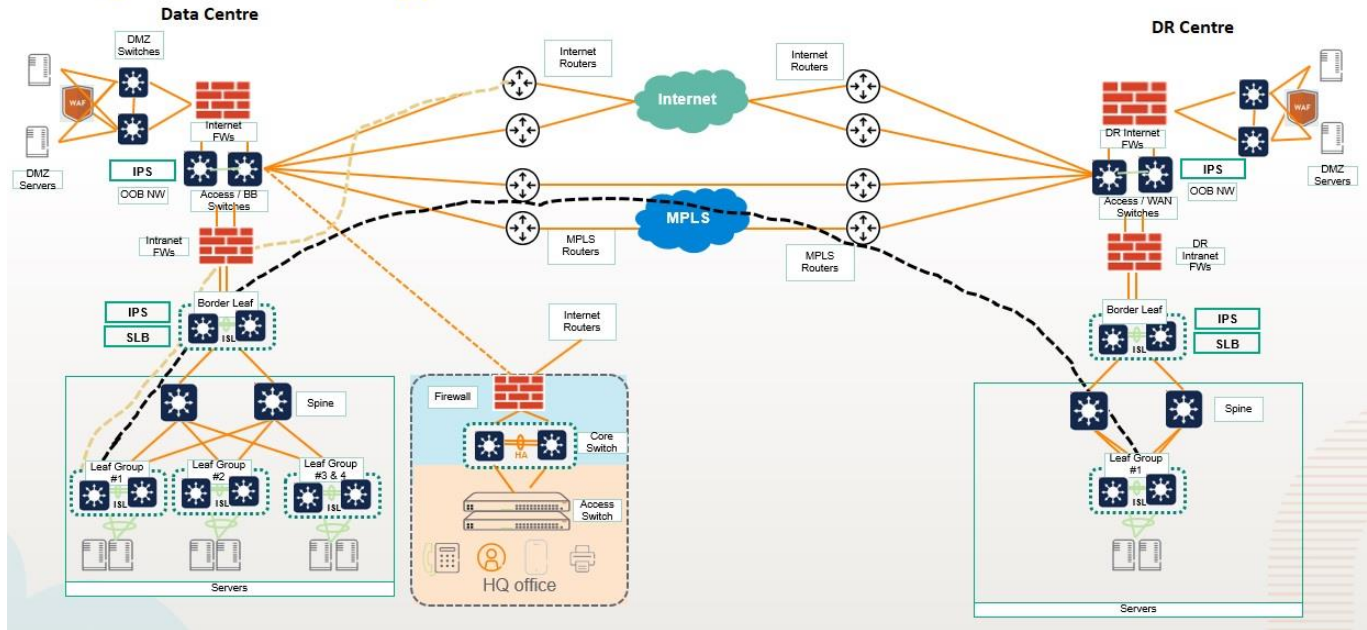
The Data Center revamping and expansion must be carried out and configured to implement the following architecture:

- 1) Software Architecture: Software Defined Data Centre
- 2) Hardware Architecture: Highly reliable and high-performance infrastructure with end-to-end redundancy and no single point of failure

The vendor should carry out the Supply, Installation and Commissioning of the hardware, software and applications for delivering the services. All Hardware solution components should have 99.99% uptime. All the proposed solutions should have both IPv4 and IPv6 functionalities for any type of rollout.

## KSEB Proposed Architecture at Data Centre and DR Centre

### Proposed Solution Approach



The DC and DR revamping process is divided into the following:

#### Part-I

- Revamping and Expanding Compute Clusters at DC and DR
  - 1) Digital Infrastructure Cluster (For AMI project)
  - 2) Critical Workload Cluster
  - 3) Production Workload Cluster
  - 4) Management & Test environment Cluster

#### Part-II

- Network Infrastructure revamping at DC and DR

#### Part-III

- Storage and Backup solution revamping at DC and DR

#### Part-IV

- Enterprise management system (EMS/NMS) for DC/DR
- Mail messaging solution for DC/DR

## **Part-I Revamping and expanding Compute Clusters**

### **1) Digital Infrastructure Cluster (For AMI project)**

This cluster will be hosting all new digital transformation initiatives including Automated Metering Infrastructure (AMI) Workload. The cluster should have complete SDDC functionalities to onboard applications on the fly.

The following outlines the requirements for a cloud infrastructure solution, focusing on several key features for managing both **virtual machines (VMs)** and **containers**

- a) **Multitenant Architecture**  
The system should support multiple tenants (Applications and stakeholders) on the same infrastructure while keeping data and operations isolated for security.
- b) **Self-Service Architecture, Quota Mgmt/Metering Services and Approval Mechanisms**  
This enables users to provision resources on their own within predefined limits and quotas. It includes built-in metering to track usage and approval processes for resource allocation.
- c) **Should be able to host and manage both VM and Containers**  
The platform must be able to host and manage both virtual machines and containerized applications, providing flexibility in handling different workloads.
- d) **Should have in-built security features such as Micro-segmentation**  
Micro-segmentation allows for granular security policies within the infrastructure, isolating workloads and controlling traffic between them for enhanced security.
- e) **Should have Authentication and RBAC features**  
Ensures only authorized personnel can access and manage different parts of the infrastructure, using role-based access control
- f) **Dynamic workload management and intelligent operations**  
The system should optimize resource allocation dynamically, distributing workloads efficiently across the infrastructure.
- g) **Integrated with Network Management, Security Policies**  
The solution should integrate seamlessly with the proposed network management and enforce security policies across all network layers.
- h) **Unified Management of entire cluster components**  
A single platform should manage all infrastructure components, including computing, memory, storage, and network resources, for easier monitoring and administration.

The tentative hardware requirements for this cluster



Sl.No	Configurations	DC	DR
1	Server with 2 x 32 Core 2.5 GHz, 512GB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	6	4

## 2) Critical Workload Cluster

This cluster will be hosting all critical workloads such as Consumer Billing, Online payment, ERP, CRM systems etc. The proposed Cluster solution should support both VM and container workloads.

The following outlines the requirements for a cloud infrastructure solution, focusing on several key features for managing both **virtual machines (VMs)** and **containers**

- Multitenant Architecture**  
The system should support multiple tenants (Applications and stakeholders) on the same infrastructure while keeping data and operations isolated for security.
- Should be able to host and manage both VM and Containers**  
The platform must be able to host and manage both virtual machines and containerized applications, providing flexibility in handling different workloads.
- Should have in-built security features such as Micro-segmentation**  
Micro-segmentation allows for granular security policies within the infrastructure, isolating workloads and controlling traffic between them for enhanced security.
- Should have Authentication and RBAC features**  
Ensures only authorized personnel can access and manage different parts of the infrastructure, using role-based access control
- Unified Management of entire cluster components**  
A single platform should manage all infrastructure components, including computing, memory, storage, and network resources, for easier monitoring and administration.

The tentative hardware requirements for this cluster will be

Sl.No	Configurations	DC	DR
1	Server with 2 x 48 Core 2.4 GHz, 1TB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	4	3



### 3) Production Workload Cluster

This cluster will be hosting all other production workloads such as LDAP, EMS/NMS, Backup, Mailing solutions, DNS, DHCP services etc. The scope of work of the bidder for this cluster will be limited to the supply, installation, and integration of the compute infrastructure as per the specifications.

The tentative hardware requirements for this cluster will be

Sl.No	Configurations	DC	DR
1	Server with 2 x 32 Core 2.5 GHz, 512GB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	3	0

### 4) Test Environment Cluster

This cluster will be hosting all test Servers of software Applications hosted in the Data Centre and Applications which are under development. The scope of work of the bidder for this cluster will be limited to the supply, installation and integration of the compute infrastructure as per the specifications.

The tentative hardware requirements for this cluster will be

Sl.No	Configurations	DC	DR
1	Server with 2 x 32 Core 2.5 GHz, 512GB RAM, 2 x 480GB NVME, RPS, 4 x 25G NIC, 2 x 32G FC HBA loaded with SR Optics	3	0

## **Part-II Network Infrastructure revamping**

The proposed solution should be an SDN-managed DC/DR network with spine-leaf architecture consisting of 100G links between spine and leaf switches, and 25G Ports across leaf switches. The spine-leaf network shall be integrated with all types of workloads and enable enhanced level of security for database and Application Servers using protocols like VxLAN, VRF etc. with multi-tenant architecture. Should have unified network and associated security policies management.

It is responsibility of the bidder to carry out seamless integration/migration of the existing DC network consisting of the following infrastructure components running in active-active mode:

- Core routers (MPLS/Internet)
- Radware Distributed Denial of Service Appliance

- Radware IDS/IPS
- Checkpoint NextGen Firewall
- Radware Web Application Firewall
- Radware Server Load Balancer
- Citrix Single Sign-On System
- OpenLDAP Directory Services

The existing HQ computer network with 10G fibre backbone shall also be integrated to the revamped Data Centre network.

The tentative hardware requirements for the Network infrastructure revamping is as follows:

Sl.No	Network equipment	DC	DR
1	Spine switch with 32 Port 100G loaded with 16 SR Optics modules on each spine	2	0
2	Spine switch with 12/24 Port 100G loaded with 8 SR Optics modules on each spine	0	2
3	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 24 nos 10G-3 nos on Each leaf	8	0
3	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 12 nos and 10G-12 on Each leaf	0	2
4	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 12x25G, 10x10G, 6x1G modules on Each leaf	2	0
5	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 6x25G, 5x10G, 6x1G modules on each Leaf	0	2
6	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2	2
7	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2	2
8	NOC LAN Switches 48 Port 1G Copper Port Switch loaded with 2 x 10G Optics on Each Switch	2	0
9	NOC LAN Switches 24 Port 1G Copper Port Switch loaded with 2 x 10G Optics	0	1

10	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	2	1
11	DCN Fabric Manager	1	1
12	OEM fiber Patch Cords- 25Mtrs	20	10
13	OEM fiber Patch Cords- 15Mtrs	10	6
14	OEM fiber Patch Cords- 5Mtrs	20	10
15	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	LS	LS

### **Part-III Storage and Backup Solutions Revamping/Upgradation**

The proposed solution should have the following components

- Storage Solutions designed to handle storage capacity for all AMI and critical workload clusters.
- Backup Solutions designed to handle both VM and container workloads
- SAN Switches to connect storage and compute clusters

High-performing and scalable SAN storage designed to handle a minimum of 5.5 Lakhs IOPS for DC (4Lakhs IOPS for DR) from day 1 with <1ms latency to enable high meter data and billing transactions during the peak period

DC backup solution should have the capability to take backup of VM and containers to store it in multiple targets and different locations with different schedules. The proposed solution should store the third copy in remote locations connected through MPLS network or leased lines.

The tentative hardware requirements for the Storage and Backup solutions

Sl.No	Configurations	DC	DR	Remote location
1	400TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 5.5 Lakhs IOPS	1	0	0
2	200TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 4 Lakhs IOPS	0	1	0

3	48 Port 32Gbps SAN Switches with 48 nos. of 32Gbps SFPs	2	0	0
4	48 Port 32Gbps SAN Switches with 24 nos. of 32Gbps SFPs	0	2	0
5	Backup Software – with 60 VM & 4 Container worker node licenses	1	0	0
6	Backup Software – with 5 VM license	0	1	0
7	Tape library with 2xLTO-9 tape drives	1	0	0
8	Tape drive- LTO-9, 18TB drive	0	1	0
9	Backup Appliance- NL SAS with 100TB storage	1	0	1

#### **Part-IV Enterprise Management Systems/NMS and Mail messaging System**

##### **1). EMS/NMS at DC/DR**

Proposed Enterprise Management Systems should monitor the IT infrastructure in Data Centre, DR Centre and MPLS WAN connecting around 1200 locations.

Should have the following functionalities

- Architecture- The EMS/NMS Application shall be running in active-passive mode in the Data Centre & DR Centre. In case there is a failure of the Application at DC, the instance at DR shall be operational
- Network Monitoring – 3000 Devices Uptime and Link Monitoring  
This involves real-time uptime and link monitoring of around 3000 network devices to ensure consistent network performance, availability, and proactive issue identification.
- Server Monitoring – Involves monitoring of around 40 nos. of Servers to observe CPU utilisation, Memory, Storage, RPS etc.
- Application service monitoring – 50 Applications service monitoring across multiple clusters  
Monitoring the health and performance of 50 application services distributed across multiple clusters to detect issues, ensure optimal performance, and maintain availability.
- Database Monitoring – 10+ Database monitoring across multiple cluster  
The system should support monitoring of over 10 databases spread across various clusters to track performance, ensure data integrity, and detect potential issues early.
- Configuration Management – 3000 Devices  
Managing configurations of around 3000 devices, ensuring consistent settings, compliance, and the ability to quickly apply updates or rollbacks if necessary.
- Asset Management – 10000 Devices

Keeping track of assets, including network devices, servers, and infrastructure components, for a total of 10000 devices. This includes lifecycle management, inventory tracking, and auditing.

h) Helpdesk, Incident and Ticketing Management

Helpdesk Functionality: Supporting field-related queries and enabling the submission of issues by users.

Ticketing System with SLA: Ticketing system that includes service-level agreements (SLAs), escalation management, and tools for assigning and tracking tickets, ensuring that both data center (DC) and field engineers can effectively resolve issues.

i) AIOps Management

Utilizing AI-driven operations (AIOps) to automate IT operations, providing real-time analytics, anomaly detection, and predictive insights to optimize performance, prevent downtime, and streamline complex tasks.

## 2) Mail Messaging Solution at DC/DR

Proposed mailing solutions should handle a minimum of 5000 accounts from day 1 and should be integrated with LDAP services.

The following are the minimum functionalities of mailing solution:

- a) **Architecture**- The Mail Messaging System shall be running in active-passive mode in the Data Centre & DR Centre. In case there is a failure of the Application at DC, the instance at DR shall be operational
- b) **Email and Calendar Integration**: Provides secure email with a comprehensive web interface and built-in calendar integration, supporting personal and shared calendars, appointments, and tasks.
- c) **Contact Management**: Offers contact lists, personal address books, and shared contacts, making it easy for users to manage personal and company-wide directories.
- d) **Task Management**: Allows users to create, track, and manage tasks with due dates, priorities, and reminders, improving productivity and organization.
- e) **Document Sharing and Briefcase**: Provides a central location to store and share documents with team members, allowing easy access and collaboration.
- f) **Unified Communication**: Integration with third-party unified communication systems, enabling chat, voice, and video features, depending on the environment.
- g) **Mobile Sync**: Supports synchronization with mobile devices, including access to emails, contacts, and calendars on iOS, Android, and Windows devices.
- h) **Web-Based Admin Console**: Simplified management of users, domains, and services through a web-based interface that makes administrative tasks easier to handle.
- i) **Advanced Security Features**: Includes anti-spam, anti-virus, and secure messaging features to protect against email-borne threats. Encryption and two-factor authentication (2FA) should be available for enhanced security.
- j) **Email Archiving and Discovery**: Offers email archiving, retention policies, and discovery tools, helping organizations meet regulatory requirements for data retention.
- k) **Collaboration Tools**: Shared calendars, email groups, and collaboration across teams
- l) **Storage Quota and Management**: Administrators can set email storage quotas, manage user accounts, and enforce data policies easily from the admin console.

- m) **Migration:** The bidder shall carry out the migration of all mailboxes/mail IDs in the existing Mailing system (Novell Groupwise GW) to the new Mail Messaging System

## **SCOPE OF WORK**

### **5.3. SURVEY AND ASSESSMENT**

#### **5.3.1. CONDUCT A COMPREHENSIVE SURVEY OF THE EXISTING DC AND DR COMPONENTS AND ROLLOUT**

- **Hardware Evaluation:**
  - Review of servers, storage systems, network devices, and power systems to ensure optimal performance
- **Software & Applications:**
  - Assessment of operating systems, applications, and virtualization platforms for efficiency, compatibility, and security.
- **Network Architecture:**
  - Analysis of network topology, bandwidth usage, latency, and redundancy for optimized connectivity and fault tolerance.
- **Security Infrastructure:**
  - Comprehensive review of firewalls, access controls, encryption mechanisms, and vulnerability management to ensure robust security measures are in place.
- **Disaster Recovery & Business Continuity:**
  - Analyse current backup strategies, disaster recovery plans, and failover systems to ensure resilience and minimal downtime in case of disruptions
- Assess the suitability and availability of KSEB infrastructure for the integration of existing DC with the proposed DC, DR IT Infrastructure
- Assess short-listed potential areas for service rollout.

#### **5.3.2. DC & DR IT INFRA DESIGN AND PLANNING**

- **Develop a detailed design, integration and migration plan**
  - **Infrastructure Architecture:**
    - Design the overall architecture including servers, storage, network systems, and virtualization platforms to ensure optimal performance, scalability, and redundancy including rack design
  - **Network Design:**

- Develop a robust network topology that supports high bandwidth, low latency, and redundancy, with clear paths for internal and external connectivity, load balancing, and failover mechanisms.
- Integrate with existing KSEB MPLS WAN and HQ LAN
- Compute & Storage:
  - Design scalable compute and storage systems that support business applications, data processing needs, and future expansion with a focus on resource utilisation, redundancy and disaster recovery.
- Integration & migration:
  - Develop and submit a comprehensive plan to integrate the revamped network & compute infrastructure to the existing network so as to enable parallel operation for a specific period and then facilitate for the migration of the software Applications to new infrastructure in a phased manner with very minimal downtime for the critical services.
- Security Framework:
  - Integrate with existing security solutions like DDoS, IDS/IPS, NGFW, WAF etc. and overall Organisation security policies
- Disaster Recovery & Business Continuity:
  - Design a comprehensive disaster recovery plan with offsite backups, failover systems, and high availability to minimize downtime and ensure quick recovery in case of disruptions.
- Cloud & Virtualization:
  - Implement cloud solutions and virtualization technologies to provide flexibility, cost efficiency, and scalability for workloads that require dynamic resources for both digital infrastructure workload and critical workload
- Compliance & Governance:
  - Ensure the design meets regulatory and industry standards (e.g., ISO, GDPR) for data security, privacy, and operational procedures.

### 5.3.3. IT INFRASTRUCTURE INSTALLATION, CONFIGURATION AND INTEGRATION

- Supply, Install, Implement, and Test Critical Solutions including private cloud, servers, storage, network, software-defined DC
  - Hardware Installation:
    - Install servers, storage systems, networking equipment, and other physical components based on the approved infrastructure design.
  - Network Configuration:
    - Set up and configure the network topology, including switches, routers, firewalls, and load balancers, ensuring connectivity, redundancy, and optimized traffic management.

- Server and Storage Configuration:
  - Install and configure servers, storage arrays, and virtualization platforms, ensuring proper resource allocation and redundancy for applications and data.
- Virtualization and Cloud:
  - Implement cloud solutions and virtualization technologies to provide flexibility, cost efficiency, and scalability for workloads that require dynamic resources for both digital infrastructure workload and critical workload
- Backup and Disaster Recovery Setup:
  - Implement backup systems, disaster recovery mechanisms, and high-availability configurations to ensure data integrity and minimize downtime in case of system failure.

#### 5.3.4. INTEGRATION & MIGRATION

- The revamped network, compute and storage infrastructure shall be integrated with the existing network & security infrastructure in the Data Centre/DR Centre
- Implement seamless communication with existing DC Infrastructure to proposed DC Infra solutions for application migrations
- Migration of software Applications to the revamped IT infrastructure is not included under the scope of the bidder. However, the successful bidder has to provide required assistance/support to KSEB IT teams for the successful migration of Software Applications to the new VMs/Containers in a phased manner so as to ensure very minimum downtime for the critical services running on 24x7 basis in the Data Centre
- Integrate with existing MPLS WAN, HQ LAN and security infrastructure

#### 5.3.5. QUALITY ASSURANCE AND TESTING

- Infrastructure Performance Testing:
  - Server & Storage Performance: Test the performance of servers, storage arrays, and virtualization platforms under different load conditions to ensure efficient resource allocation and scalability.
  - Network Performance: Conduct network tests across all network segments (LAN, WAN, VPN) to verify optimal data flow and identify potential bottlenecks.
- Private Cloud Testing:
  - Virtualization & Workload Distribution: Test virtual machine performance, resource distribution, and workload balancing within the private cloud to ensure efficient use of compute and storage resources.
  - Cloud Security: Conduct security testing specific to cloud services, including encryption, access management, and data isolation between virtual machines or tenants.



- Compliance Testing: Ensure that the private cloud meets relevant regulatory standards (e.g., ISO, NIST, GDPR) for data security and privacy.
- Disaster Recovery & High Availability Testing:
  - Failover Testing: Test the data center's redundancy and failover mechanisms to ensure high availability during outages or component failures.
  - Backup & Restore Testing: Validate that backup systems and disaster recovery processes are functioning correctly by simulating data loss and testing recovery times and accuracy.
  - Private Cloud Failover: Test the ability of the private cloud environment to fail over to backup infrastructure seamlessly, without service interruption.
- Monitoring & Alerting Systems:
  - Monitoring Tools: Validate that monitoring tools are correctly configured to track key performance metrics, resource usage, and security incidents.
  - Alerting Mechanisms: Test alerting systems to ensure timely notifications in case of performance issues, security breaches, or hardware failures.

#### 5.3.6. TRAINING AND TECHNOLOGY TRANSFER

- Conduct training sessions to familiarize KSEB teams with the Private cloud, virtualization, Servers, storage, spine-leaf network, backup solutions, EMS/NMS etc. at both user level and administrator level as per the detailed training schedule given in Appendix-H.

#### 5.3.7. POST IMPLEMENTATION SUPPORT, MAINTENANCE AND UPGRADES

- KSEBL will employ the required teams to monitor DC, DR and MPLS infrastructure
- The bidder shall provide one dedicated network resource (L2/L3) at the Data Centre from 9am to 5pm on all working days, for a period of one year from the date of go-live of the revamped IT infrastructure. The above resource will be responsible to attend, coordinate and rectify the issues related to the supplied IT infrastructure. The onsite resource shall have professional certification in networking with at least 3 years of experience in setting up and maintaining Data Centre network infrastructure.
- Bidder should provide all backend OEM contract details to the KSEB. Necessary contracts shall be executed by the bidder with the OEMs of Servers, network, Storage etc. in order to provide required support to rectify the issues as per SLA timelines.
- Bidder should provide onsite Technical support on 24x7 basis for any hardware issues, software issues, solution issues raised by KSEB during the contract period as per SLA timelines.

- Applicable, stable software updates/upgrades should be done by the bidder based on the approval from the Utility, as soon as the OEM releases such updates/upgrades.

#### 5.3.8. COMPLIANCE AND REGULATORY REQUIREMENTS

- Ensure the design and implementation meets regulatory and industry standards (e.g., ISO, ISMS, GDPR etc.) for information/cyber security, privacy, and operational procedures.

#### 5.3.9. DOCUMENTATION AND REPORTING

- Maintain detailed documentation of the DC infrastructure, configurations, and system specifications.
- Prepare regular progress reports, including project milestones, implementation status, and key performance indicators.
- Provide comprehensive documentation and handover materials to facilitate future operations and maintenance.
- In addition, provide documentation standards for DC Architecture diagrams, configurations, and operating procedures; reporting requirements, including progress reports, milestone updates, and key performance indicators; and system documentation.

#### 5.3.10. PROJECT MANAGEMENT

- Assign a dedicated Project Manager responsible for overseeing and coordinating all project activities.
- Develop a project schedule with clear milestones, timelines, and deliverables. Conduct regular project meetings and maintain open communication channels with all stakeholders.

### 5.4. INDICATIVE BILL OF MATERIALS

#### 5.4.1. INDICATIVE BILL OF MATERIAL AT DC AND DR

The following is an indicative bill of materials required to carry out the revamping works as per the RFP specifications at DC, DR and Remote location from Day 1

Sl.No	Item	Qty
<b>Data Centre</b>		
<b>A. Compute</b>		
1	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	6
2	Server with 2 x 48 Core 2.3 GHz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVMe	4
3	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	3
4	Server with 2 x 32 Core 2.5 GHz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	3
5	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1)	1
6	Cloud Infra Solutions for Critical workload (For Servers under S/N.2)	1
<b>B. Network infrastructure</b>		
7	Spine switch with 32 Port 100G loaded with 16 SR Optics modules on each spine	2
8	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 24 nos 10G-3 nos on Each leaf	8
9	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 12x25G, 10x10G, 6x1G modules on Each leaf	2
10	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
11	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
12	NOC LAN Switches 48 Port 1G Copper Port Switch loaded with 2 x 10G Optics on Each Switch	2
13	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	2
14	DCN Fabric Manager as per specifications with required license	1

15	OEM fiber Patch Cords- 25Mtrs	20
16	OEM fiber Patch Cords- 15Mtrs	10
17	OEM fiber Patch Cords- 5Mtrs	20
18	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	Ls
<b>C. Storage &amp; Backup Systems</b>		
19	400TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G, Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 5.5 Lakhs IOPS	1
20	48 Port 32Gbps SAN Switches with 48 nos. of 32Gbps SFPs	2
21	Backup Solution- 60 VM & 4 Container worker node licenses	1
22	Tape library with 2xLTO-9 tape drives	1
23	Backup Appliance NL SAS-100TB	1
24	OEM fiber Patch Cords 10/15Mtrs for Servers to SAN Switch connectivity (Should consider based on Server QTY)	Ls
<b>D. EMS/NMS &amp; Mail Messaging System</b>		
25	EMS/NMS Software as per specifications (running in active-Passive mode at DC/DR)	1
26	Mail Messaging System as per specifications (running in active-Passive mode at DC/DR)	1
<b>E. Miscellaneous</b>		
27	42U OEM Racks for Servers/network equipments	4
28	Man power deployment charges (One resource during office hours at Data Centre for a period of one year)	1
29	Desktops type-I for NOC Room	10
30	Desktops type-II for NOC Room	5
31	Laptops for System/Network Administrators	2
32	Miscellaneous Item-1	1
33	Miscellaneous Item-2	1
34	Miscellaneous Item-3	1

DR Centre		
A. Compute		
35	Server with 2 x 32 Core 2.5 Ghz Processor, 512 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	4
36	Server with 2 x 48 Core 2.3 Ghz Processor, 1024 GB RAM, 4 x 25G NIC, 2 X 32G FC HBA, RPS, SR Optics, 2 x 480GB NVME	3
37	Cloud Infra Solutions for Digital Infrastructure workload (For Servers under S/N.1)	1
B. Network infrastructure		
38	Spine switch with 12/24 Port 100G loaded with 8 SR Optics modules on each spine	2
39	Leaf switch with 48 x 25G downlink ports loaded with SR Optics 100G- 2nos on each leaf, 25G- 12 nos and 10G-12 on Each leaf	2
40	Border Leaf switches with 48 x 25G downlink ports loaded with SR Optics 2x100G, 6x25G, 5x10G, 6x1G modules on each Leaf	2
41	WAN Access/BB Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
42	DMZ Switch with 24 port 10G loaded with modules 10x10G, 10x1G on Each Switch	2
43	NOC LAN Switches 24 Port 1G Copper Port Switch loaded with 2 x 10G Optics	1
44	Management LAN Switch- 48 Port 1G Copper ports loaded with 2 x 10G Optics on each Switch	1
45	DCN Fabric Manager as per specifications with required license	1
46	OEM fiber Patch Cords- 25Mtrs	10
47	OEM fiber Patch Cords- 15Mtrs	6
48	OEM fiber Patch Cords- 5Mtrs	10
49	OEM fiber Patch Cords- 5Mtrs (Should consider based on Server QTY)	Ls
C. Storage & Backup		

50	200TB SAN Storage – All Flash NVMe storage with Dual Controllers, Dual 8 port 32G , Dual 4 PORT 25G, RPS, Snapshots, DC-DR Replication, 4 Lakhs IOPS	1
51	48 Port 32Gbps SAN Switches with 24 nos. of 32Gbps SFPs	2
52	Backup Solution – 5VM License	1
53	Tape drive- LTO-9, 18TB drive	1
54	Miscellaneous Item-1	1
55	Miscellaneous Item-2	1
56	Miscellaneous Item-3	1
<b>Remote Location</b>		
57	Backup Appliance NL SAS – 100TB	1
<b>Installation and Commissioning</b>		
58	Supply, installation, configuration, integration, testing, commissioning and go-live of all hardware and software components	1

**Note:**

The BoQ items mentioned above are indicative only. The bidder is liable to provide additional items/services required, if any, for providing all required features/functionalities/services mentioned in the Scope of Work

Cyber Security Compliance: All products (hardware/software) quoted by the bidder shall comply with the statutory guidelines of Government of India related to Cyber Security, industry standards etc.

The detailed Technical Specifications of above items are given in Appendix-H

#### 5.4.2. INDICATIVE BILL OF MATERIAL DURING NEXT TWO YEARS (UPGRADE BASED ON DEMAND)

The following is an indicative bill of materials will be required to implement and upgrade the existing solutions during first two years of the Contract Period of 5 years for which PO will be raised based on the Utility's demand. The below list will be considered for price discovery and price bid evaluation purposes.

Sl.No	Specifications	Qty
DC		
1	64GB RAM for Servers	5
2	Storage Upgrade (50TB unit)	5
3	100G SR optics	5
4	32G SR optics	10
5	25G SR optics	10
6	10G SR Optics	25
7	Backup Solution license – 10VM	1
8	EMS/NMS- Network device license (500 nos.)	2
9	Mail Messaging System – User account/mail box license- (500 nos.)	2

## 6. QUALIFICATION REQUIREMENTS

This section covers the minimum requirement with respect to experience, capability, and other particulars of the Bidder to be considered eligible for participation in the bid for the proposed work. The Bidder must possess the requisite experience, strength, and capabilities for carrying out the revamping of the IT infrastructure of the Data Centre and DR Centre of KSEBL as described in the RFP document. The Bids must be complete in all respect and shall cover the entire scope of work as stipulated in the tender document. The invitation to Bid is open to all Bidders who qualify the eligibility criteria given below.

The bid should be submitted by Single Bidder and no consortium allowed.

### 6.1. PRE - QUALIFICATION CRITERIA FOR BIDDERS

Clause No.	Qualification Criteria	Supporting Documents Required
1	a. Bidder shall be a Company incorporated / registered under the Companies Act 1956/ 2013. b. Bidder must be registered with appropriate authorities for all applicable statutory duties/taxes Companies incorporated / registered in India under relevant legislation and authorized to carry out business in India may also participate	Valid documentary proof of: <ul style="list-style-type: none"> <li>▪ Incorporation/registration Certificate along with Memorandum &amp; Articles of Association</li> <li>▪ Certificate consequent to change of name, if applicable</li> <li>▪ GST Registration Certificate</li> </ul>
2	The bidder should have been in the Data Centre System integration, Operation & Management services for the last 5 years.	
3	The Bidder shall not be under a Declaration of Ineligibility for corrupt or fraudulent practices or blacklisted with any of the Central / State Government agencies.	Declaration in this regard by the authorized signatory of the Bidder
4	Minimum Average Annual turnover of Rs. 27Crores from IT Infrastructure Projects (i.e. Supply/Installation/ Maintenance/Management of Servers, Network, Storage etc. for setting up/maintaining Data Centre IT Infrastructure projects) for any of the three financial years during the last five years ending 31 <sup>st</sup> March 2024.	Chartered Accountant certificate for annual turnover and net worth supported by copy of audited statement of account (PL account & balance Sheet) duly certified by CA.
5	Bidder shall have positive net worth in each of the last three financial years ending March 31, 2024	
6	The bidder should have experience in successfully completing a minimum of three IT infrastructure projects of order value of Rs. 12 Crores each for setting up/system integration of Data Centre IT infrastructure which includes Servers with Virtualization, Networking, Storage etc. during the last three years. Out of the above, at least	Proof of Work Order & client certificate for successful completion to be submitted



Clause No.	Qualification Criteria	Supporting Documents Required
	<p>one project shall include installation and configuration of Spine-Leaf network/Software Defined network in a tier-3 Data Centre.</p> <p style="text-align: center;"><b>OR</b></p> <p>The bidder should have experience in providing Facility Management Services for the IT infrastructure in a tier-3 Data Centre for a continuous period of 3 years during the last five years. The contract shall have order value of minimum Rs. 36 Crores and shall include Servers with Virtualization, Storage and Spine-Leaf Network/Software Defined network</p>	
7	The Bidder/OEM from a Country which shares a land border with India will be eligible only if they are registered with the competent authority as per Govt. of India Order, issued by Ministry of Finance vide No.F.No.6/18/2019-PPD dated 23/07/2020	Copy of document of registration with DPIIT, Govt. of India.
8	<p>The bidder should submit valid letter from the OEMs in the specified format for all active components and associated software in the BoQ confirming the following:</p> <ul style="list-style-type: none"> <li>▪ Authorization for bidder</li> <li>▪ Confirm that the products quoted are not end of life products within next 7 years</li> <li>▪ Undertake that the support including spares, patches etc. for the quoted products shall be available for next 7 years</li> </ul>	OEM support letter to be submitted in the specified format
9	Bidder should be an ISO 9001: 2015 and ISO 27001:2015 or later certified company.	Copy of certification from authorized certification body
10	<p>The bidder should have 50 technically qualified professionals in its team having a minimum experience of 5 years in the following areas: System Integration, Virtualization and cloud solution implementation, Software defined network, Core network management in Spine-Leaf architecture, Security Management, Data Centre IT infrastructure maintenance, Server Management, Enterprise class Storage Systems, Tape library and backup Utilities out of which,</p> <p>1. At least one person from each group shall have professional Certification in the following areas: Network, OS, Security, Storage</p>	Signed resume of employees showing skill set need to be submitted. Scanned signatures shall be accepted.

Clause No.	Qualification Criteria	Supporting Documents Required
	2. At least five persons shall have skills in Open Source based Operating Systems/Databases	
11	The OEMs of Server, Storage and Networking Components quoted by the bidder should have presence in the country for the past 10 years.	1. Self-declaration by the OEM 2. Proof for previously supplied orders of the OEM
12	The OEMs of Server, Storage, Network and Backup products should have ISO 9001, ISO 14001, ISO 27001 and CMMI level3 or above certifications	Copy of valid Certification documents
13	All products offered by the bidder should be available with the concerned OEMs as on date and should be publicly referenceable.	Self-declaration by the OEM
14	The OEMs of Server, Storage, Networking Components should have local Technical Assistance Centre (TAC) support in India and Should have sales office and Support/Returned Materials Authorization (RMA) depot in Kerala/South India.	Details of Technical Assistance Centre, Sales office and Support/RMA depot
15	OEM of Storage should have deployed at least 3 Enterprise class Storage solutions in Government / Banking / PSU during the last three years in India.	Copy of Work Orders and its satisfactory project completion report

**Note:**

- It shall be noted that merely meeting the minimum requirements does not indicate that the bidders shall be short listed for opening of financial bid. The short listing shall be made considering all the technical parameters.
- The bid documents uploaded shall be properly aligned, signed with page numbers and index relevant portions, in the documents submitted in pursuance of eligibility criterion mentioned above, shall be highlighted.
- Bidders must ensure that all required documents have been uploaded along with the bid to justify eligibility.
- Financial statements audited by a practicing Chartered Accountant shall only be accepted. In addition to the financial statements, Turnover/Networth Certificate duly certified by the practicing Chartered Accountant in the prescribed format (Appendix E & F) to be furnished. Status of registration of the Chartered Accountant will be ensured by verifying with official website of the Institute of Chartered Accountants of India [www.icai.org](http://www.icai.org). Since Unique Documents Identification Number (UDIN) is mandatory for issuing certificate by practicing Chartered Accountants, the UDIN will be clearly specified in this above certificate. The authenticity of the documents will be verified in the website [www.udin.icai.org](http://www.udin.icai.org).

- An undertaking in the prescribed format given in Appendix-E shall be submitted by the bidder along with the bid.
- Stringent action including blacklisting of the firm from participating tenders of KSEBL will be taken against bidder for furnishing forged documents.
- Financial statements of the bidder in the case of Limited Companies will be verified with the published financial statements available in their website.
- Bidder should be an authorized partner/seller of all the proposed solutions/products and should provide Manufacturer Authorization in the template provided in the RFP.



5.2	Helpdesk	Resolution of tickets logged as per the Severity definition chart	99%	Reports generated from Ticket logging system	95% - 99% calls resolved in specified time: 0.1% penalty on the total contract amount  90% - 95% calls resolved in specified time: 0.2% penalty on the total contract amount
5.3	Install, Moves, Add, Changes (IMAC) Services	Should be part of Monthly project status report	95%	Report	0.001% of total project cost
5.4	Asset/ Inventory Management	Provide monthly MIS Asset Inventory  Conduct Annual Physical Asset verification	95%  100%	Report  Approval of Physical Asset Verification report	0.001% of total project cost  0.001% of total project cost
5.5	Supplier Management Services	Evaluation of Supplier Performance on quarterly basis	100%	Approval of Supplier Performance evaluation report	0.001% of total contract amount
		Tracking of Supplier SLA & tickets logged with suppliers	95%	Status of tickets logged with Suppliers	0.001% of total contract amount
5.8	LAN & Workstation administration	Resolution of ticket logged	99%	Reports generated from Ticket logging system	Covered under 5.2
5.9	Network Monitoring & Management	Resolution of tickets logged related to Networks	99%	Reports generated from Ticket logging system	Covered under 5.2
		<b>Data Centre Network Availability</b>  Minimum of 99.9% uptime measured on a monthly basis	99.9%	Report	0.1% of total contract amount for less than 99.8%  0.2% of total contract amount for less than 98.0%

5.11	Server Administration/ Management	Rollout of patches and upgrades (OS, hypervisor or infra level) on Servers after patch being approved on test environment	98%	Patch update report	0.02% of total contract amount
		Uptime of VMs/ Containers on monthly basis (without service interruption)	99.8%	Report	0.02% of total contract value for less than 99.8%  0.03% of total contract value for less than 98%  0.05% of total contract value for less than 95%
		Uptime of each physical Servers except	94%	Report	0.03% of total contract amount for less than 94%  0.04% of total contract amount for less than 91%  0.05% of total contract amount for less than 88%
5.14	Mail/ Messaging System	Up time of email Servers/services	99%	Report	0.02% of total contract amount for less than 99%  0.03% of total contract amount for less than 98%  0.05% of total contract amount for less than 95%
		Provide monthly MIS of user account and mailboxes created/deleted.	95%	Report	0.001% of total contract value
5.15	Uptime of EMS/NMS	Daily MIS of server and device health checkup (CPU, disk space, memory utilization, I/O utilization, DB/Application uptime etc.)	100%	Reports generated from EMS/NMS system	0.01% of total contract value
6.1	Incident management	Resolution of tickets logged in Incident Management tool	99%	Reports generated from Ticket logging system	0.01% of total contract amount

6.3	Problem Management	Supplier shall analyze all the incidents and provide a root cause report every month if there are more than 10 incidents of the same type. Supplier shall take the needed corrective action to prevent further issues due to the same cause.	100% timely submission covering all incidents logged in that month	Root cause report  Incident report stating problems faced by the users  Document detailing corrective action	0.02% penalty on the total contract amount, if the Supplier does not submit a problem report for that month.  0.05% penalty on the total contract value, if the Supplier does not perform the corrective action for more than One calendar month.
6.4	Change Management	Resolution of Change Management tickets logged in Change Management tool	99%	Reports generated from Change Management System	Covered under 5.2
6.7	Availability Management	Should be part of Monthly status report	95%	Report	0.001% of total contract amount
6.8	Performance Management	Should be part of Monthly status report	95%	Report	0.001% of total contract amount
6.9	Capacity Management	Should be part of monthly status report	95%	Report	0.001% of total contract amount
6.10	Security Management	Should be part of Monthly status report	95%	Report	0.001% of total contract amount

**Note:**

1. The bidder is liable to provide post implementation support services as mentioned in the detailed descriptions in the Scope of Work in accordance with the concerned SLA Clauses listed above.
2. In case of Breach of SLA Clauses, penalty will be deducted from the Performance Bank Guarantee submitted by the bidder.
3. The total deduction of penalty per month shall not exceed 0.2% of the total contract amount
4. The Agreement Authority shall have the right to make suitable amendments in the above SLA conditions based on the requirements from time to time, on mutually agreed terms and conditions

**Uptime Calculation for the month:**

$\{[(\text{Actual Uptime} + \text{Scheduled Downtime}) / \text{Total No. of Hours in a Month}] \times 100\}$

"Actual Uptime" means, of the Total Hours, the aggregate number of hours in any month during which each equipment, is actually available for use.

"Scheduled Downtime" means the aggregate number of hours in any month during which each equipment, is down during total Hours, due to preventive maintenance, scheduled maintenance, infrastructure problems or any other situation which is not attributable to Supplier's (or Service provider's) failure to exercise due care in performing Supplier's responsibilities.

The Purchaser would provide a maximum of 04 hours of planned downtime for the preventive maintenance (as part of scheduled downtime) per month per equipment/service.

The downtime for scheduled maintenance (patch application, upgrades – OS, Database, etc.) would need to be mutually agreed between Utility and the Bidder. To reduce this time, various maintenance activities can be clubbed together with proper planning.

"Total Hours" means the total hours over the measurement period i.e. one month (24 \* number of days in the month).

#### **Downtime Calculation:**

The recording of downtime shall commence at the time of registering the call with Supplier or Service Provider for any downtime situation for the equipment.

Downtime shall end when the problem is rectified, and the application/ service is available to the user.

Down time will not be considered for following:

- 1) Pre-scheduled preventive maintenance and health checks (Scheduled Downtime).
- 2) Failover time (30 minutes) in case of cluster environment. Beyond which the service would be not available and appropriate penalty shall be imposed on the Supplier.
- 3) Bug in any application which causes the non-availability of the service.

If the utility elects to continue the operation of the machine / equipment, when a part of the machine is giving problem and leading to downtime, the commencement of downtime shall be deferred until the utility releases the machine / equipment to the Bidder for remedial action.

#### **SERVICE DURATIONS/ SERVICE LEVELS/ CRITICALITY**

Typical Services Availability & duration of their requirements are tabulated below for reference.



#### SERVICE AVAILABILITY & CRITICALITY CHART

SERVICE	DURATION	CRITICALITY
SERVICE DESK	24 HOURS	URGENT – 12X6 REST - HIGH
ASSET MANAGEMENT SERVICES	8X6	MEDIUM
VENDOR MANAGEMENT SERVICES	8X6	MEDIUM
SERVER/VM MANAGEMENT SERVICES	24x7	CRITICAL
DATA CENTRE ADMINISTRATION	24X7	CRITICAL
NETWORK MANAGEMENT – DC/DR	24X7	CRITICAL
NETWORK MANAGEMENT - LAN	12X7	CRITICAL
STORAGE MANAGEMENT	12x7	MEDIUM
MESSAGING/EMAIL MANAGEMENT	12X6	MEDIUM
BACKUP MANAGEMENT	12x6	MEDIUM
MANAGEMENT OF EMS/NMS	24X7	CRITICAL

**Table 2: Severity Definition Chart**

S/N	Support Category	Criteria	Resolution	Maximum Response Time
1	Critical	The system is unable to be used for normal business activities. There is certainty of financial loss to PURCHASER.	90 Minutes	15 Minutes
2	Urgent	There is a problem with part of the system, which impacts on Purchaser's decision making. No viable workaround is available. There is a likelihood of financial loss.	4 Hours	1 Hour
3	High	The efficiency of users is being impacted, but has a viable workaround.	6 hours	2 Hours
4	Medium	A low impact problem that affects the efficiency of users but has a simple workaround.	12 Hours	8 Hours
5	Low	A fault, which has no particular impact on processing of normal business activities.	One Week	8 Hours

#### 7.5. BREACH OF SLA

In case the Supplier does not meet the service levels mentioned in document, for three (3) continuous time-periods as specified in the relevant clause, the Purchaser will treat it as a case of breach of Service Level Agreement. The following steps will be taken in such a case:-

- 1) Purchaser issues a show cause notice to the Supplier.
- 2) Supplier should reply to the notice within three working days.
- 3) If the Purchaser authorities are not satisfied with the reply, the Purchaser will initiate further actions.

## **7.6. EXCLUSIONS**

The Supplier will be exempted from any delays or slippages on SLA parameters arising out of following reasons:-

- 1 Delay in execution due to delay (in approval, review etc) from Purchaser's side. Any such delays will be notified in written to the IT Team.

## **7.7. MONITORING AND AUDITING**

IT Team of Purchaser will review the performance of Supplier against the SLA parameters each month, or at any periodicity defined in the contract document. The review / audit report will form basis of any action relating to imposing penalty or breach of contract. Any such review / audit can be scheduled or unscheduled. The results will be shared with the Supplier as soon as possible. Purchaser reserves the right to appoint a third-party auditor to validate the SLA.

## **7.8. REPORTING PROCEDURE**

The Supplier's representative will prepare and distribute SLA performance reports in an agreed upon format by the 10th working day of subsequent month of the reporting period. The reports will include "actual versus target" SLA performance, a variance analysis and discussion of appropriate issues or significant events. Performance reports will be distributed to the Purchaser's IT Team.

## **7.9. ISSUE MANAGEMENT PROCEDURE**

### **7.9.1. GENERAL**

This process provides an appropriate management structure for the orderly consideration and resolution of business and operational issues in the event that quick consensus is not reached between Purchaser and Supplier. It is expected that this pre-defined process will only be used on an exception basis if issues are not resolved at lower management levels.

### **7.9.2. ISSUE MANAGEMENT PROCESS**

- Either Purchaser or Supplier may raise an issue by documenting the business or technical problem, which presents a reasonably objective summary of both points of view and identifies specific points of disagreement with possible solutions.

- Purchaser and the Supplier's representative will determine which committee or executive level should logically be involved in resolution.
- A meeting or conference call will be conducted to resolve the issue in a timely manner. The documented issues will be distributed to the participants at least 24 hours prior to the discussion if the issue is not an emergency requiring immediate attention.
- Management of Purchaser and Supplier will develop a temporary, if needed, and the permanent solution for the problem at hand. The Supplier will then communicate the resolution to all interested parties.
- In the event of a significant business issue is still unresolved, the dispute will be resolved as specified in Section.4 "Terms and Conditions" , Clause 4.22 – Governing Law and Dispute Resolution

## **7.10. SLA CHANGE CONTROL**

### **7.10.1. GENERAL**

It is acknowledged that this SLA may change as Purchaser's business needs evolve over the course of the contract period. As such, this document also defines the following management procedures:

- A process for negotiating changes to the SLA.
- An issue management process for documenting and resolving particularly difficult issues.
- Purchaser and Supplier management escalation process to be used in the event that an issue is not being resolved in a timely manner.

Any changes to the levels of service provided during the term of this agreement will be requested, documented and negotiated in good faith by both parties. Either party can request a change. Changes will be documented as an addendum to this document and consequently the contract.

Changes/modification in the application, which require development efforts less than one month shall be considered as included in the scope. Any changes/modifications with require development effort more than one month will be considered for the payment based on mutually agreed terms and conditions.

### 7.10.2. SLA CHANGE PROCESS

Both the parties may amend this SLA by mutual agreement in accordance. Changes can be proposed by either party. Normally the forum for negotiating SLA changes will be Purchaser's monthly review meetings.

### 7.10.3. VERSION CONTROL

All negotiated SLA changes will require changing the version control number. As appropriate, minor changes may be accumulated for periodic release (e.g. every quarter) or for release when a critical threshold of change has occurred.

## 7.11. MANAGEMENT ESCALATION PROCEDURES

The purpose of this escalation process is to provide a quick and orderly method of notifying both parties that an issue is not being successfully resolved at the lowest possible management level. Implementing this procedure ensures that purchaser and Supplier management are communicating at the appropriate levels. Escalation should take place on an exception basis and only if successful issue resolution cannot be achieved in a reasonable time frame.

- a. All issues would be raised to the project management team, which is completely responsible for the day to day aspects of the provided services. The project management team shall classify the issues based on their severity level and resolve them within appropriate timelines.
- b. If project management team is unable to resolve an issue, the issue would be escalated to the top management with options/ risks detailed for decision. Top management will make decisions based on the options/ risks presented by the IT team.

## 8. PROPOSAL SUBMISSION FORMS

**Note:**

*Technical proposal to be furnished by the bidder on its letter head and each page should signed by the authorized signatory.*

*An affidavit indicating that all the information, affirmation made in this proposal shall be complied with shall be provided.*

*The Technical Proposal shall be given strictly in same sequence of order as given in this document.*

## 8.1. BID FORM

***(To be submitted along with price Bid)***  
***(To be executed on Rs.200/- non-judicial Kerala Stamp Paper)***

### **RFP No. CE(IT,CR&CAPs)/10/2024-2025 dated 29.09.2024**

To

The Chief Engineer (IT, CR & CAPs)  
8<sup>th</sup> Floor, Vidyuthi Bhavanam,  
Pattom, Thiruvananthapuram

Sir,

Having examined the conditions of contract and specification I/we, the undersigned offer to appointment of IT Implementation Agency (ITIA) for Revamping of IT infrastructure in the Data Centre and DR Centre of KSEB under RDSS at KSEBL in conformity with the said conditions of Contract and specification for the sum of or such other sums as may be ascertained in accordance with the schedule of prices attached herewith and made part of this tender.

We undertake, if our tender is accepted, to commence delivery within .....days and to complete delivery of all the items specified in the contract within .....days, calculated from the date of your Purchase order.

If our tender is accepted we will deposit the amount specified in RFP for the due performance of the contract. We agree to abide by this bid for a period specified and it shall remain binding upon us for acceptance by the K.S.E. Board, at any time before the stipulated expiry.

Until a formal contract is prepared and executed, our offer as per the price bid shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any other tender you may receive.

Dated this .....day of .....20....

Signature  
(In the capacity of)

Duly authorized to sign bid for and on behalf of:

Witness:

Address:

Signature:

Note: Scanned copy of Bid agreement in Rs 200/- stamp paper to be submitted online.

## 8.2. TECHNICAL PROPOSAL SUBMISSION SHEET

To,

Chief Engineer (IT, CR & CAPs)  
8th floor, Vidyuthi Bhavanam,  
Pattom, Thiruvananthapuram – 695 004

SUBJECT: Submission of Bid for “ ”.

Dear Sir,

We hereby submit our bid for RFP for “ ” RFP No. .... Dated .....

We, the undersigned, declare that:

### A. Declaration

1. We have examined and have no reservations to the Bidding Document, including Addenda No. (if Any);
2. We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule, the following Goods and Related Services:
3. Our Bid shall be valid for a minimum period of 90 days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
4. If our Bid is accepted, we commit to obtain a Performance Security in the amount of 10 % of the Contract Price for the due performance of the Contract;
5. We are not participating, as Bidders, in more than one Bid in this bidding process in accordance with the Bidding Document;
6. Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the KSEBL;
7. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed.
8. We understand that you are not bound to accept the best evaluated bid or any other bid that you may receive.
9. We hereby confirm that the bid comply all requirements set out in the bidding document and NO TECHNICAL and COMMERCIAL Deviation are contained in the Bid.

Name: .....

In the capacity of: .....

Signed: .....

Duly authorized to sign the Bid for and on behalf of: .....

Date& Seal:





#### 8.4. FINANCIAL CAPABILITIES

Financial Details (as per audited Balance Sheets) in crore)

SL No.	Year	Turn over	Net Worth	PAT
1	FY 2021-2022			
2	FY 2022-2023			
3	FY 2023-2024			

(Signature of the Statutory Auditor of the Bidder)

*Note: Audited Financial Statements/ Annual Report of the aforementioned FYs duly signed by the Chartered Accountant need to be attached.*

## 8.5. BIDDER EXPERIENCE

Sl. No	Name of project	Brief Scope Necessarily including role played by Bidder, modules implemented, Sector classification	Client Name and Contact details	Currency of payment (in INR or USD)	Cost of assignment	Date of Awarded commencement	Date of completion	Was assignment Satisfactorily completed	Was it a Power Sector Project? (Y/N) Provide Detail	Node base (wherever applicable)
1										
2										
3										
..										

Please provide separate client details for bidder & each consortium member

*Note:*

1. Bidder has to provide all relevant details of all quoted the experiences for Qualification Requirements in the above format.
2. Relevant supporting documents as per Section 6. Qualification Requirements has to be submitted against each projects.

We hereby certify that the above information is correct.

Name: .....

In the capacity of: .....

Signed: .....

Duly authorized to sign the Bid for and on behalf of: .....

Date& Seal:

## 8.6. TECHNICAL SPECIFICATIONS

Refer to Section 2: Technical Specifications, for details. Please respond to each specification in following format.

### Technical Specification for Equipment offered

Sr. No	Specifications	Compliance. Yes/No	Remark
1			
2			
..			

Please note bidder has to provide above compliance sheet for all the products/equipment offered.

We hereby certify that the above information is correct.

Name: .....

In the capacity of: .....

Signed: .....

Duly authorized to sign the Bid for and on behalf of: .....

Date& Seal:

## 8.7. APPROACH AND METHODOLOGY

The following points elaborate various requirements within Approach and Methodology.

- 1) Understanding of Purchaser and its requirement with clear mention of the deliverables
- 2) Details of proposed methodology
- 3) Project Team Structure
- 4) Resource planning and estimation
- 5) Risk planning
- 6) Detailed work plan with timelines

### Understanding of Utility and its requirement

Bidder should depict complete understanding of the as-is system of the Utility based on the information provided in the Bid Document. It should also require to list down all the deliverables that has been planned as a part of the overall project with timelines. Also provide details of prior interaction with Utility, if any.

### Details of proposed methodology

Please provide details of methodology followed by your organization in successfully implementing similar projects. Also highlight the special steps that your organization/ consortium intends to take in order to ensure that the change from current system to proposed one will be smooth and effective.

### Project Team Structure

In this section please provide detail of the team that would be deployed by your organization to execute the project. Please provide details of the team structure in the following format:

**Table: Proposed Project Team Structure**

Name of Staff	Position Assigned	International or Domestic	Firm	Employment status with the firm (Full time/ Associate)	Education (Degree, Year, Institution)	Area of Expertise and number of years of relevant experience	Task Assigned
A. Professional Staff							
B. Support Staff							

### Resource planning and estimation

Bidder shall provide detailed staffing schedule of the professional and support staff in the following format:

- For Professional Staff the input should be indicated individually; for Support Staff it should be indicated by category (e.g.: IT administrator, field survey staff etc.).
- Months are counted from the start of the assignment. For each staff indicate separately staff input for off-site and on-site work.

**Table: Proposed Resource Planning and Estimation**

No.	Name of Staff	Position	Staff Input							Total
			In Weeks	W1	W2	W3	W4	W5	.....	
	A. Professional Staff									
	B. Support Staff									

### Risk planning

Bidder shall assess underlying risks in implementation of the Project and detail out the methodology to mitigate them. It may include development of a risk assessment matrix indicating severity of the risk, chance of its occurrence and its mitigation approach.

### Project Experience

Bidder shall provide details of projects with application modules and other requirements (as mentioned in Eligibility Criteria). Please do not supply the names of clients who are no longer using your product/system. Bidders need to submit the details as per the format in the table provided and necessary supporting documents should be attached.

#### 12.4.11 Team details (CVs)

Use the following format for key personnel who would be involved in the project. Please include details of team members proposed to provide field support etc., please ensure that the CV has a maximum length of 3 pages. In case of replacement of personal from the project team, Supplier is required to submit the CV of the new person with equivalent or better education qualification and relevant professional experience who will be joining the team and get in duly approved. The new person can start working in the project only after his/her CV has been approved by the KSEB.

**Table: Format of Curriculum Vitae**

1. Proposed Position:
2. Name of Firm:

3. Name of Staff:
4. Date of Birth:
5. Nationality:
6. Education:

Year	Degree/Examination	Institute/Board

7. Membership of Professional Associations:
8. Other Training:
9. Countries of Work Experience:
10. Languages:

Language	Speaking	Reading	Writing

11. Employment Record:

From	To	Employer	Positions Held

12. Detailed Tasks Assigned:
13. Work Undertaken that best illustrates capability to handle the tasks assigned:
14. Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Signature of authorized  
Representative of the staff

Date:

Full name of authorized representative:

## Quality Certifications

ISO 9001	(Yes/No)	
ISO 14001	(Yes/No)	

Certificate copies need to be attached.

## Project Management Practices

Please provide high-level details of the project management practices that will be followed to manage the project. The project management practices would include (but not be limited to) details of:-

- Bidder must provide details of how they envisage the contract being managed including principles such as (but not limited to) joint planning and control mechanisms; regular and active review meetings; Project management of individual work streams and overall program management of the entire service; Performance reporting
- Bidder should outline their proposed governance structure and designate a Service Manager to co-ordinate their activities and provide a focal point of contact to whom Utility can refer on any matter concerning the service.
- Reporting lines and decision-making powers within the bidder's organization must be explained
- Reporting formats and templates that would be followed by the bidders
- Outline the proposed escalation procedures in the event that issues arise.

## Quality Assurance

- Quality of service - Suppliers must provide details of their proposed approach to quality assurance to ensure the quality of services. This should include:
  - Responsibility of quality of service;
  - How the supplier will ensure quality service is provided;
  - How quality will be measured
- Does your company (and consortium partner) have any quality certification / Assessment? If so, please provide your responses for the following:

### Table: Details of Certification

Description	Bidder's Response
Certification / Assessment Name	
Who issued the certification/assessment?	
When was the certification/assessment obtained?	
Does this certification/assessment process involve periodic reviews and observations/ remarks after such review? If so, please provide details and specify when your company is due for its next quality review?	

- Please specify your company's process for product development and enhancements

### Documentation

Please provide a list of all user documents that will be provided along with the software package. This must include the following minimum documents:

- System and administration manuals
- Technical support handbook
- User Manuals;
- Error Messages and their Meanings;
- Training Manuals;
- Analysis & Design Manuals with the relevant data flow diagrams, entity relationship diagrams, schemas etc.;
- Additions/ changes to the documents after upgrades; and
- Operations Manuals.

*Note: All the provided documents should be in English/Malayalam*

### Deviations Sheet

Only “non-material deviations” (which means only those deviations that do not qualify as material deviations of bid document) will be considered by the purchaser. Please describe all the non-material deviations w.r.t Terms & Conditions described in the General Conditions of Contract, and Special Conditions of Contract.

If bidder desires to take any non-material deviation from the terms & conditions of the tender, it should be mentioned specifically in this deviation sheet. Unless such deviations are mentioned in this deviation sheet, the same will not be taken into consideration.

**Table: Format for Deviations**

Tender Clarifications – Terms and Conditions			
Sl. No.	Tender Reference (Section /Clause number)	Details of Clauses / Section needing deviation	Deviation proposed

Except aforesaid deviations, the entire order, if placed, shall be executed in accordance with specifications and any other conditions, variations/deviations etc. if found, elsewhere in this proposal should not be given any consideration while finalizing the tender.

It is not mandatory to consider and accept the deviation mentioned on deviation sheet proposed by the bidder.

Note: - Continuation sheet of like size & format may be used as per bidder’s requirement wherever necessary.



**8.8. PERFORMA FOR NO DEVIATION DECLARATION**

(To be furnished on Bidder's Letterhead)

To:

Chief Engineer (IT, CR & CAPs)  
8<sup>th</sup> floor, Vydyuthi Bhavanam,  
Pattom, Thiruvananthapuram – 695 004

Reference: RFN No. ....dated .....

Sir,

There are no deviations (null deviations) from the terms and conditions of the tender. All the terms and conditions of the tender are acceptable to us.

Yours faithfully

Name: .....

In the capacity of: .....

Signed: .....

Duly authorized to sign the Bid for and on behalf of: .....

Date& Seal:

### **8.9. BIDDER'S AUTHORISATION CERTIFICATE**

(To be furnished on Bidder's Letterhead.)

Please attach the board resolution / valid power of attorney in favour of person signing this authorizing letter.

## 8.10. MANUFACTURER'S AUTHORIZATION

(To be obtained from all OEMs)

To:

Chief Engineer (IT, CR & CAPs)  
8<sup>th</sup> floor, Vidyuthi Bhavanam,  
Pattom, Thiruvananthapuram – 695 004

Reference: RFP No. ....dated .....

We....., who are established and reputable manufacturers of ..... having facilities in India, do hereby authorize .....to submit a bid, and subsequently negotiate and sign the Contract with you against RFP for Revamping of IT infrastructure in the Data Centre and DR Centre of KSEB under RDSS of GoI against RFP No .....including the equipment or goods produced by us.

We hereby extend our full guarantee and warranty for the above specified equipment or goods offered supporting the supply, installation and achieving of Operational Acceptance by the Bidder against these Bidding Documents, and duly authorize said Bidder to act on our behalf in fulfilling these guarantee and warranty obligations. We also hereby declare that we and ....., have entered into a formal relationship in which, during the duration of the Contract (including warranty / defects liability) we, the Manufacturer or Producer, will make our technical and engineering staff fully available to the technical and engineering staff of the successful Bidder to assist that Bidder, on a reasonable and best effort basis, in the performance of all its obligations to the Purchaser under the Contract.

For and on behalf of the Manufacturer

Signed:

Date:

Place:

### 8.11. SELF DECLARATION OF NO BLACKLISTING

To:

Chief Engineer (IT, CR & CAPs)  
8<sup>th</sup> floor, Vidyuthi Bhavanam,  
Pattom, Thiruvananthapuram – 695 004

Reference: RFP No. ....dated .....

Sir,

I have carefully gone through the Terms & Conditions contained in the RFP Document

[No. ....] regarding .....for the period of the project. I hereby declare that my company has not been debarred/black listed by any Government / Semi-Government organizations in India. I further certify that I am competent officer in my company to make this declaration.

Yours faithfully,

Name: .....

In the capacity of: .....

Signed: .....

Duly authorized to sign the Bid for and on behalf of: .....

Date& Seal:

## 9. APPENDIX A - CONTRACT AGREEMENT FORM

**Kerala Stamp Paper**  
**(value of Stamp paper is**  
**Rs 1/- for every 1000/- rupees or part thereof on**  
**the amount agreed in the Contract subject to a**  
**maximum of Rs 1,00,000/-)**

### **Agreement**

THIS AGREEMENT is made on this ..... day of ....., Year 20.... , between Shri.....Chief Engineer (IT, CR& CAPs) of Kerala State Electricity Board Ltd, VidyuthiBhavanam, Thiruvananthapuram – 695004, Kerala, India (hereinafter called “the Purchaser”) which expression shall unless repugnant to the context thereof include his successors, heirs, assigns, of the one part, and ----- (hereinafter called “the Supplier”) which expression shall unless repugnant to the context thereof include his successors, heirs, assigns, of the other part.

WHEREAS the Purchaser had invited RFP for..... vide E-Tender No. ....dated.....2020.

AND WHEREAS various bids were received pursuant to the said bid

AND WHEREAS the Purchaser has accepted a Bid by the Supplier for the above said work in the sum of INR (Indian Rupees ); inclusive of all Taxes & Duties (hereinafter “the Contract Price”).

And in pursuance of having accepted the said bid the parties have agreed to enter into this agreement.  
NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract referred to.

2. The following documents (collectively referred to as “Contract Documents”) shall be deemed to form and be read and construed as part of this Agreement, viz.:

- i. the detailed award of contract;
- ii. the Service level agreement and Contract Agreement;
- iii. Terms & Conditions of Contract;
- iv. the Scope of Work;
- v. Technical Specifications
- vi. the Instructions to bidders;
- vii. the Purchaser’s Notification to the Supplier for Award of Contract;
- viii. Supplier’s response (proposal) to the RFP, including the Bid Submission Sheet and the Price Proposal submitted by the Supplier;
- ix. Acceptance of purchaser’s notification
- x. RFP document (.....) along with all corrigendum, clarifications and related documents issued by the Purchaser.

In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

3. In consideration of the payments to be made by the Purchaser to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Related Services and to remedy the defects therein and bring them in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Related Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of the India on the day, month and year indicated above.

Signed by Chief Engineer (IT, CR& CAPs)/ Kerala State Electricity Board Ltd (Authorized Utility official)

Witness-1 - Name & Designation of the Witness to be decided by KSEBL

Witness-2 - Name & Designation of the Witness to be decided by KSEBL

Signed by  
(for the Supplier)

Witness-1 – Name & Designation of the Witness of the Supplier

Witness-2 - Name & Designation of the Witness of the Supplier

## 10. APPENDIX B - PROFOMA FOR PERFORMANCE BANK GUARANTEE

ON STAMP PAPER OF RS.200/-

### PERFORMANCE BANK GUARANTEE

BG No. \_\_\_\_\_

Date: \_\_\_\_\_

This guarantee is made on this ..... day of ..... 20.... by ..... (complete postal address of the bank) hereinafter called 'the **Bank**', which expression shall unless repugnant to the context or meaning thereof shall include its successors and assigns.

WHEREAS the Kerala State Electricity Board Limited, a Company incorporated by the Government of Kerala under the Companies Act, 1956 having its registered office at Vidyuthi Bhavanam, Pattom, Thiruvananthapuram, Kerala, PIN – 695 004, represented by [name of the agreement authority hereinafter called as 'the **Purchaser**', which expression shall unless repugnant to the context or meaning thereof shall include its successors and assigns ..... having ..... agreed ..... to ..... exempt ..... (hereinafter called **contractor(s)**)" which expression unless repugnant to the context and meaning thereof shall include its successors and assigns) from depositing with the **Purchaser** a sum of Rs. .... towards Performance Security Deposit in lieu of the said **contractor(s)** having agreed to furnish a bank guarantee for the said sum of Rs. .... as required under the terms and conditions of Purchase Order No. .... dated ..... (hereinafter referred as the 'order') placed by the **Purchaser** on the said **contractor(s)** and on specific request on the part of the said **contractor(s)**, we the **Bank** hereby unconditionally and irrevocably affirm and undertake-

- (a) At the request of the **contractor(s)**, we 'the **Bank**', do hereby unconditionally and irrevocably affirm and undertake that we are the Guarantor and are responsible to the **Purchaser** up to a total sum of ..... [Rupees ..... only] such sum being payable by us to the **Purchaser** immediately upon receipt of first written demand from the said **Purchaser**.
- (b) We unconditionally and irrevocably undertake to pay to the **Purchaser** on an immediate basis, upon receipt of first written demand from the said **Purchaser** and without any cavil or argument or delaying tactics or reference by us to the **contractor(s)** and without any need for the **Purchaser** to convey to us any

reasons for invocation of the guarantee or to prove the failure to perform on the part of the **contractor(s)** or to show grounds or reasons for the demand or the sum specified therein, the entire sum or sums within the limits of .....  
[Rupees ..... only].

- (c) We hereby waive the necessity of the **Purchaser** demanding the said amount from the **contractor(s)** prior to serving the demand notice upon us.
- (d) We further agree and affirm that no change or addition to or other modification to the terms of the agreement, shall in any way release us from any liability under this unconditional and irrevocable guarantee and we hereby waive notice of any such change, addition or modification. We further agree with the **Purchaser** that the **Purchaser** shall be the sole and exclusive judge to determine that whether or not any sum or sums are due and payable to him by the **contractor(s)**, which are recoverable by the **Purchaser** by invocation of this guarantee.
- (e) This guarantee will not be discharged due to the change in constitution of the **Bank** or the **Purchaser**. We undertake not to withdraw or revoke this guarantee during its currency/validity period, except with the previous written consent of the **Purchaser**.
- (f) We unconditionally and irrevocably undertake to pay to the **Purchaser**, any amount so demanded not exceeding ..... [Rupees ..... only] notwithstanding any dispute or disputes raised by the Employer or anyone else in any suit or proceedings before any dispute review expert, arbitrator, court, tribunal or other authority, our liability under this guarantee being absolute, unconditional and unequivocal. The payment so made by us under this guarantee to the **Purchaser**, shall be a valid discharge of our liability for payment under this guarantee and the **contractor(s)** shall have no claim against us for making such payment.
- (g) This unconditional and irrevocable guarantee shall remain in full force and effect and shall remain valid until ..... and shall be extended from time to time for such period as may be desired by the **contractor(s)** on whose behalf it is



Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed ..... (value in figures) ..... [value in words .....].

2. This unconditional and irrevocable Bank Guarantee shall be valid with effect from..... to .....

3. We are liable to pay the guaranteed amount or any part thereof under this unconditional and irrevocable Bank Guarantee only and only if the **Purchaser** serves upon us a written claim or demand on or before ..... [validity date].

For and on behalf of the Bank

[Signature of authorized signatory(ies)]

Signature:

Name :

Designation:

POA Number:

Contact Nos. : Tel..... Mobile.....

Fax No.

Email

Common seal of the Bank:

Witness: .

1.

2.

Signature:

Name:

Address:

Contact No. Tel.

Mobile

email:

## 11. APPENDIX C- SERVICE LEVEL AGREEMENT

### 1. Purpose of this Agreement

The purpose of this SLA is to clearly define the levels of service to be provided by Supplier to Purchaser for the duration of this contract or until this SLA has been amended. The benefits of this SLA are to:

1. Trigger a process that applies Purchaser and Supplier management attention to some aspect of performance only when that aspect drops below an agreed upon threshold, or target.
2. Makes explicit the performance related expectations on performance required by the Purchaser
3. Assist the Purchaser to control levels and performance of services provided by Supplier
4. This SLA is between Supplier and Purchaser.

### 2. Description of Services Provided

Supplier shall provide service as defined in Scope of Work, in accordance to the definitions and conditions as defined in the Terms and Conditions.

### 3. Duration of SLA

This Service level agreement would be valid for entire period of contract. This SLA may be reviewed and revised according to the procedures detailed in SLA Change Control.

### 4. Service Level Agreements & Targets

This section is agreed to by Purchaser and Supplier as the key supplier performance indicator for this engagement. The following section reflects the measurements to be used to track and report systems performance on a regular basis. The targets shown in the following tables are for the period of contact or its revision whichever is later.

#### 4.1 Service Level Chart

(Add the Service Level Chart Table-1 given in Section.7 'Service Level Agreement')

##### a. Severity Definition Chart

Table-2: Severity Definition Chart

6	Support Category	Criteria	Resolution	Maximum Response Time
6.1	Critical	The system is unable to be used for normal business activities. There is certainty of financial loss to PURCHASER.	90 Minutes	15 Minutes

6	Support Category	Criteria	Resolution	Maximum Response Time
6.2	Urgent	There is a problem with part of the system, which impacts on Purchaser's decision making. No viable workaround is available. There is a likelihood of financial loss.	4 Hours	1 Hour
6.3	High	The efficiency of users is being impacted, but has a viable workaround.	6 hours	2 Hours
6.4	Medium	A low impact problem that affects the efficiency of users but has a simple workaround.	12 Hours	8 Hours
6.5	Low	A fault, which has no particular impact on processing of normal business activities.	One Week	8 Hours

## 5. Breach of SLA

In case the Supplier does not meet the service levels mentioned in the Service Level Chart, for three (3) continuous time periods as specified in the relevant clause, the Purchaser will treat it as a case of breach of Service Level Agreement. The following steps will be taken in such a case:-

1. Purchaser issues a show cause notice to the Supplier.
2. Supplier should reply to the notice within three working days.
3. If the Purchaser authorities are not satisfied with the reply, the Purchaser will initiate termination process of contract with prior notice.

## 6. Exclusions

The Supplier will be exempted from any delays or slippages on SLA parameters arising out of following reasons:-

1. Delay in execution due to delay (in approval, review etc.) from Purchaser's side. Any such delays will be notified in written to the IT Team.
2. The network links will be provided by a third party and the Supplier will monitor and report any problems on behalf of third party. If Supplier notifies and Purchaser approves that the delay or fault was due to the third party link services then such loss will not be considered for tracking Supplier's SLA parameters (Also reduced from total service time).

## 7. Monitoring and Auditing

IT Team of Purchaser will review the performance of Supplier against the SLA parameters each month, or at any periodicity defined in the contract document. The review / audit report will form basis of any action relating to imposing penalty or breach of contract. Any such review / audit can be scheduled or unscheduled. The results will be shared with the Supplier as soon as possible. Purchaser reserves the right to appoint a third-party auditor to validate the SLA.

## 8. Reporting Procedures

The Supplier's representative will prepare and distribute SLA performance reports in an agreed upon format by the 10th working day of subsequent month of the reporting period. The reports will include "actual versus target" SLA performance, a variance analysis and discussion of appropriate issues or significant events. Performance reports will be distributed to the Purchaser's IT Team.

## **9. Issue Management Procedures**

### **9.1 General**

This process provides an appropriate management structure for the orderly consideration and resolution of business and operational issues in the event that quick consensus is not reached between Purchaser and Supplier. It is expected that this pre-defined process will only be used on an exception basis if issues are not resolved at lower management levels.

### **9.2 Issue Management Process**

- Either Purchaser or Supplier may raise an issue by documenting the business or technical problem, which presents a reasonably objective summary of both points of view and identifies specific points of disagreement with possible solutions.
- Purchaser and the Supplier's representative will determine which committee or executive level should logically be involved in resolution.
- A meeting or conference call will be conducted to resolve the issue in a timely manner. The documented issues will be distributed to the participants at least
- 24 hours prior to the discussion if the issue is not an emergency requiring immediate attention.
- Management of Purchaser and Supplier will develop a temporary, if needed, and the permanent solution for the problem at hand. The Supplier will then communicate the resolution to all interested parties.
- In the event of a significant business issue is still unresolved, the dispute will be resolved as specified in Section.4 "Terms and Conditions", Clause 4.22 – Governing Law and Dispute Resolution

## **10. SLA Change Control**

### **10.1 General**

It is acknowledged that this SLA may change as Purchaser's business needs evolve over the course of the contract period. As such, this document also defines the following management procedures:

1. A process for negotiating changes to the SLA.
2. An issue management process for documenting and resolving particularly difficult issues.
3. Purchaser and Supplier management escalation process to be used in the event that an issue is not being resolved in a timely manner.

Any changes to the levels of service provided during the term of this agreement will be requested, documented and negotiated in good faith by both parties. Either party can request a change. Changes will be documented as an addendum to this document and consequently the contract.

Changes/modification in the application, which require development efforts less than one month shall be considered as included in the scope. Any changes/modifications with require development effort more than one month will be considered for the payment based on mutually agreed terms and conditions.

#### 10.2 SLA Change Process

Both the parties may amend this SLA by mutual agreement in accordance. Changes can be proposed by either party. Normally the forum for negotiating SLA changes will be Purchaser's monthly review meetings.

#### 10.3 Version Control

All negotiated SLA changes will require changing the version control number. As appropriate, minor changes may be accumulated for periodic release (e.g. every quarter) or for release when a critical threshold of change has occurred.

### **11. Management Escalation Procedures**

The purpose of this escalation process is to provide a quick and orderly method of notifying both parties that an issue is not being successfully resolved at the lowest possible management level. Implementing this procedure ensures that purchaser and Supplier management are communicating at the appropriate levels. Escalation should take place on an exception basis and only if successful issue resolution cannot be achieved in a reasonable time frame.

1. All issues would be raised to the project nodal officer, which is completely responsible for the day to day aspects of the implementation/service. The project nodal officer shall classify the issues based on their severity level and resolve them within appropriate timelines.
2. If project nodal officer is unable to resolve an issue, the issue would be escalated to the top management with options/ risks detailed for decision. Top management will make decisions based on the options/ risks presented by the IT team.

## 12. APPENDIX D - BOUNDEN AGREEMENT TO ACCOMPANY THE TENDER

(To be submitted along with EMD)

(To be executed on a Rs.200 /- non-judicial Kerala Stamp Paper)

Articles of agreement executed on this.....the ... ..day of ..... Two thousand and ..... between the Kerala State Electricity Board Ltd. acting through (here enter the designation of the officer who has invited this tender ..... (herein after referred to as "The KSEB Ltd") of the one part and Sri..... here enter name and address of the tenderer) hereinafter referred to as "The bounden" of the other part

WHEREAS in response to the invitation for tenders as per Notification No. .... dated .....and subsequent amendments thereto, the bounden has submitted to the KSEB Ltd a tender for the ..... specified therein subject to the terms and conditions contained in the said tender documents.

WHEREAS the bounden has also deposited with the KSEB Ltd a sum of Rs. .... as earnest money for execution of an agreement undertaking the due fulfilment of the contract in case his tender is accepted by the KSEB Ltd.

Now THESE PRESENTS WITNESS and it is hereby mutually agreed as follows

1. In case the tender submitted by the bounden is accepted by the KSEB Ltd and the contract for .....is awarded to the bounden, the bounden shall within 15 days of acceptance of this tender execute an agreement with the KSEB Ltd incorporating all the terms and conditions under which the KSEB Limited accepts his tender.

2. In case the bounden fails to execute the agreement as aforesaid incorporating the terms and conditions governing the contract the KSEB Ltd shall have power and authority to recover from the bounden any loss or damages caused to the KSEB Ltd by such breach as may be determined by the KSEB Ltd, appropriating the earnest money deposited by the bounden and if the earnest money is found to be inadequate, the deficit amount may be recovered from the bounden and his properties movable and immovable also in the manner here in after contained.

3. All sums found due to the KSEB Ltd under or by virtue of this agreement shall be recoverable from the bounden and his properties, movable and immovable under the provisions of the Revenue Recovery Act for the time being in force as though such sums are arrears of land revenue and also in such other manner as the KSEB Ltd may deem fit.

In witness where of Sri.....(here enter name and designation) for and on behalf of the KSEB Ltd and Sri.....(here enter the name of the bounden) have hereunto set their hands the day and year shown against their respective signatures.

Signed by Sri.....(date)

In the presence of witness.

- 1.
- 2.

Signed by Shri.....(date)

In the presence of witness

- 1.
- 2.

### 13. APPENDIX E- DECLARATION

#### DECLARATION CERTIFICATE

We do hereby declare that the contents of the offer submitted vide No. .... against this tender (Tender No. .... dated ..... ) have been given after fully understanding and the same are true and complete in every particular and that if any untrue abetment/information contained therein, the said offer shall be considered absolutely null and void and we shall be liable for any penal action as per the provisions of Law for the time being in force.

1. I/We ..... Partner/Legal Attorney/Proprietor/Accredited Representative of M/s..... declare that we are submitting our tender for the supply of materials/execution of work vide our offer No. .... dated .....
2. The contents of the offer given after fully understanding and all information furnished by me/us are correct and true and complete in every respect.
3. All documents/credentials submitted along with the tender are genuine, authentic, true and valid.
4. If any information or document submitted is found to be false/incorrect, the said offer shall be considered absolutely null & void and action as deemed fit may be taken against me/us including termination of the contract, forfeiture of all dues including Earnest Money Deposit/Security Deposit and blacklisting of my/our firm and all partners of the firm as per provisions of Law.

Place:  
Date:

Signature of the Tenderer

(Seal of the Firm)

## 14. APPENDIX F- NON-DISCLOSURE AGREEMENT (NDA)

### Format for Non-Disclosure Agreement

This 'Non – Disclosure Agreement' is entered on this the ..... day of ....., 20.... between Kerala State Electricity Board Limited, Vidyuthi Bhavanam, Pattom, Thiruvananthapuram, Kerala -695 004 represented by the Chief Engineer (IT,CR&CAPs), which expression unless excluded by or repugnant to the context or meaning thereof shall include his successors, representatives and assignees on the one part [hereinafter referred to as the 'Disclosing Party'] and the ..... (the complete postal address) represented by its ....., which expression unless excluded by or repugnant to the context or meaning thereof shall include his successors, representatives and assignees on the other part [hereinafter referred to as the 'Receiving Party']. The said Non-disclosure Agreement is entered for the purpose of ensuring confidentiality of the data and other information associated with the contract and for the protection of such information from any unauthorized use and disclosure.

1. For purposes of this Agreement, “**Confidential Information**” shall mean *Information relating to the business, clients, customers, and business practices of the Disclosing Party and shall include but not limited to commercial, technical, scientific, operational, administrative, financial, marketing, business, or intellectual property nature or otherwise, whether oral or written, relating to disclosing party and any other information that is reasonably determined to be confidential or proprietary.*

but the same will not include information that:

- (i) *is now or thereafter becomes generally known or available to the public, through no act or omission on the part of the Receiving Party; or*
- (ii) *was known by the Receiving Party prior to receiving such information from the Disclosing Party and without restriction as to use or disclosure; or*
- (iii) *is rightfully acquired by the Receiving Party from a third party who has the right to disclose it and who provides it without restriction as to use or disclosure; or*
- (iv) *is independently developed by the Receiving Party without access to any Confidential*





waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder.

7. Receiving Party acknowledges that unauthorized use or disclosure or threatened disclosure of the Confidential Information may cause irreparable harm and significant damages to the Disclosing Party. Accordingly, Receiving Party agrees that the Disclosing Party will have absolute right to obtain immediate relief from the Receiving Party on account of any unauthorized use or disclosure or threatened disclosure of its Confidential Information, in addition to any other rights and remedies that it may have in law or otherwise without establishing any actual proof of damages.
8. Receiving Party shall treat the existence of this Agreement, its contents, and its subject matter as Confidential Information and require the written approval of Disclosing Party prior to any public acknowledgement of this Agreement, its contents, or its subject matter except as stated in clause 2 above.
9. This Agreement shall be governed by and construed in accordance with Indian laws and any dispute arising from it shall be subject to the exclusive jurisdiction of the Civil Courts at Thiruvananthapuram.
10. This Agreement is the complete and exclusive statement regarding the subject matter of this Agreement and supersedes all prior agreements, understandings, and communications, oral or written, between the parties regarding the subject matter of this Agreement. Receiving Party shall not assign this Agreement, in whole or in part, without the Disclosing Party's prior written consent, and any attempted assignment without such consent will be void.

**IN WITNESS WHEREOF**, the parties hereto have executed this Mutual Non-Disclosure Agreement.

**KSEBL**

.....

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Designation: \_\_\_\_\_

**Witness**

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

## 15. APPENDIX G- TRAINING

The bidder shall conduct offline training sessions for KSEB IT team on various infrastructure components of network, storage, cloud etc. including lab sessions covering the following contents:

### A. Spine-Leaf Network Architecture

- Basic network design approach- 3 tier Vs 2 tier architecture, advantages and disadvantages
- Spine-Leaf architecture, deployment, advantages, disadvantages
- Layer-2 and Layer-3 Spine leaf networks
- KSEB Data Centre Spine-leaf network architecture- detailed functionalities at each level
- Configuration of various Switches and data flow at each layer
- VLAN, VxLAN, BGP and VRF protocols
- VxLAN tunnelling, Micro segmentation
- Software Defined Network- Concepts, SDN Vs Traditional networks
- SDN controller/ Network Orchestrator
- Installation and configuration of SDN controller
- SDN Applications – Hub, Switch, Firewall etc.
- Lab sessions for installation and configuration

### B. Storage Management

The bidder has to provide complete product training with hands-on sessions covering the following modules

- SAN/Storage concepts and fundamentals.
- Storage System Overview and General Product Training.
- Storage integration, connectivity and architecture.
- Storage Management Software training.
- Storage Administration, Operation and Management for carrying out day-to-day activities.
- 24X7 monitoring of the critical parameters for ensuring high-availability of data.
- Demonstration of native/manufacture tools for Storage Monitoring & Management.
- Thin Provisioning, Data Tiering, Accounting functionalities and utilities.
- Data Protection and Storage Backup functionalities such as Mirroring, Snapshot, Snap Clone, Hot spare etc.
- DC-DR SAN replication configuration.
- Storage Virtualization.
- Basic troubleshooting procedure.
- Data Migration Tools/Utilities.

Supplier should provide training plan, course preparation and course materials as a deliverable

### C. EMS/NMS Software

- Installation, configuration, finetuning
- Adding network devices
- Network monitoring- creating architecture, setting parameters, basic and advanced functionalities
- Server monitoring- Basic and advanced functionalities

- Helpdesk and Incident Management
- Report generation, SLA monitoring

**D. Mail Messaging System**

- Functional architecture- POP3, SMTP, IMAP and HTTP Servers
- Installation, configuration and finetuning
- Administration, user and mailbox management
- Backup and recovery

**E. Virtualisation & Hypervisors**

- Virtualisation – Basic concepts, advantages & disadvantages
- Common uses of Virtualisation, Hardware requirements, Software Requirements
- VM Vs Container deployments
- VM architecture, Hardware, Software concepts
- VM/Container creation, operations
- Virtual Networking, Storage pools – creation and administration
- LXC/Docker containers, Kubernetes concepts, basic administration
- Container, worker node, Hardware and software configurations
- HA configuration, Ensuring redundancy, migration of VM/containers
- Security configurations
- Common issues and Troubleshooting

## 16. APPENDIX H - TECHNICAL SPECIFICATIONS



**KERALA STATE ELECTRICITY BOARD Ltd**

(Incorporated under the Companies Act, 1956)

Office of the Chief Engineer (IT, CR and CAPs)

Registered Office: Vidyuthi Bhavanam, Pattom,

Thiruvananthapuram – 695 004

CIN: U40100KL2011SGC027424

Website: [www.kseb.in](http://www.kseb.in)

Phone: 0471-2514610/2514274

Email: [ceit@kseb.in](mailto:ceit@kseb.in)

**Corrigendum No. 5 dated 4.12.2024 in the e-Tender No. 2024 KSEB 692967 1 (RFP ID No. CEIT/ITCSD/10/2024-25 dated 27.09.2024 – RFP for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS scheme.**

This document supersedes any other document in this regard.

- I. Amendments in existing clauses.
- II. Revised technical specifications.
- III. Clarifications to Pre-bid queries (published separately in the etender website)

**Sd/-**

**Chief Engineer (IT, CR & CAPs)**

## **I. Amendments in existing clauses**

### **4.21 PROJECT SCHEDULE**

#### **Revamping of IT infrastructure in the Data Centre & DR Centre**

<b>SL No.</b>	<b>Activity</b>	<b>Timeline</b>
1	Date of LOA	T0
2	Submission of reports on site survey, detailed design, man power deployment plan, migration plan, project schedule etc.	T0 + 2 Weeks
3	Supply of IT infrastructure components at Data Centre and DR Centre	T0 + 8 weeks
4	Installation, Configuration & system integration of all Active and Passive components at Data Centre and DR Centre	T0 + 16 weeks
5	Migration of WAN links, Internet links, SSO, Security components, Services, LDAP etc. to the newly setup IT infrastructure at Data Centre and DR Centre	T0 + 24 weeks
6	Acceptance Testing and Go-live of the revamped Data Centre and DR Centre	T0 + 28 weeks = T
7	Onsite warranty and support as per SLA	T + 5 years

### **6.1 PRE- QUALIFICATION CRITERIA FOR BIDDERS**

<b>Clause No.</b>	<b>Qualification Criteria</b>	<b>Supporting Documents Required</b>
1	a. Bidder shall be a Company incorporated / registered under the Companies Act 1956/ 2013. b. Bidder must be registered with appropriate authorities for all applicable statutory duties/taxes Companies incorporated / registered in India under relevant legislation and authorized to carry out business in India may also participate	Valid documentary proof of: <ul style="list-style-type: none"><li>▪ Incorporation/registration Certificate along with Memorandum &amp; Articles of Association</li><li>▪ Certificate consequent to change of name, if applicable</li><li>▪ GST Registration Certificate</li></ul>
2	The bidder should have been in the IT related services for the last 5 years.	
3	The Bidder shall not be under a Declaration of Ineligibility for corrupt or fraudulent practices or blacklisted with any of the Central / State Government agencies.	Declaration in this regard by the authorized signatory of the Bidder



Clause No.	Qualification Criteria	Supporting Documents Required
4	Minimum Average Annual turnover of Rs. 27Crores for any of the three financial years during the last five years ending 31 <sup>st</sup> March 2024.	Chartered Accountant certificate for annual turnover and net worth supported by copy of audited statement of account (PL account & balance Sheet) duly certified by CA.
5	Bidder shall have positive net worth in each of the last three financial years ending March 31, 2024	
6(a)	<p>The bidder should have experience in successfully completing IT infrastructure projects for setting up/system integration of Data Centre IT infrastructure which includes Servers with Virtualization, Networking, Storage etc. during the last five years in Central/State Government/PSUs/Nationalised Banks/Reputed Organisations with order value as follows:</p> <ol style="list-style-type: none"> <li>1. Three similar projects not less than Rs. 12 Crore each; or</li> <li>2. Two similar projects not less than Rs. 18 Crore each; or</li> <li>3. One similar project not less than Rs. 30 Crore.</li> </ol> <p style="text-align: center;"><b>OR</b></p> <p>The bidder should have experience in providing Facility Management Services for the IT infrastructure in a Data Centre of Central/State Government/PSUs/Nationalised Banks/Reputed Organisations for a continuous period of 3 years during the last seven years. The contract shall have order value of minimum Rs. 36 Crores.</p>	Proof of Work Order & client certificate for successful completion to be submitted
6(b)	The bidder shall also have experience in setting up Spine-Leaf network in a reputed Data Centre.	Proof of Work Order / client certificate for successful completion to be submitted
7	The Bidder/OEM from a Country which shares a land border with India will be eligible only if they are registered with the competent authority as per Govt. of India Order, issued by Ministry of Finance vide No.F.No.6/18/2019-PPD dated 23/07/2020	Copy of document of registration with DPIIT, Govt. of India.
8	<p>The bidder should submit valid letter from the OEMs in the specified format for all active components and associated software in the BoQ confirming the following:</p> <ul style="list-style-type: none"> <li>▪ Authorization for bidder</li> <li>▪ Confirm that the products quoted are not end of life products within next 5 years</li> <li>▪ Undertake that the support including spares, patches etc. for the quoted products shall be available for next 7 years</li> </ul>	OEM support letter to be submitted
9	Bidder should be an ISO 9001: 2015 and ISO 27001:2015 or later certified company.	Copy of certification from authorized certification body
10	The bidder should have 50 technically qualified professionals in its team having a minimum experience of 5 years in the following areas: System Integration, Virtualization and cloud solution implementation,	Signed resume of employees showing skill set need to be submitted. Scanned signatures shall be accepted.

Clause No.	Qualification Criteria	Supporting Documents Required
	<p>Software defined network, Core network management in Spine-Leaf architecture, Security Management, Data Centre IT infrastructure maintenance, Server Management, Enterprise class Storage Systems, Tape library and backup Utilities out of which,</p> <ol style="list-style-type: none"> <li>1. At least one person from each group shall have professional Certification in the following areas: Network, OS, Security, Storage</li> <li>2. At least five persons shall have skills in Open Source based Operating Systems/Databases</li> </ol>	
11	The OEMs of Server, Storage and Networking Components quoted by the bidder should have presence in the country for the past 10 years.	<ol style="list-style-type: none"> <li>1. Self-declaration by the OEM</li> <li>2. Proof for previously supplied orders of the OEM</li> </ol>
12	The OEMs of Server, Storage, Network and Backup products should have ISO 9001, ISO 14001, ISO 27001 and CMMI level3 or above certifications	Copy of valid Certification documents
13	All products offered by the bidder should be available with the concerned OEMs as on date and should be publicly referenceable.	Self-declaration by the OEM
14	The OEMs of Server, Storage, Networking Components should have local Technical Assistance Centre (TAC) support in India and Should have sales office and Support/Returned Materials Authorization (RMA) depot in Kerala/South India.	Details of Technical Assistance Centre, Sales office and Support/RMA depot
15	OEM of Storage should have deployed at least 3 Enterprise class Storage solutions in Government / Banking / PSU / Corporate Organisations during the last three years in India.	Copy of Work Orders and its satisfactory project completion report

**Note:**

- It shall be noted that merely meeting the minimum requirements does not indicate that the bidders shall be short listed for opening of financial bid. The short listing shall be made considering all the technical parameters.
- The bid documents uploaded shall be properly aligned, signed with page numbers and index relevant portions, in the documents submitted in pursuance of eligibility criterion mentioned above, shall be highlighted.
- Bidders must ensure that all required documents have been uploaded along with the bid to justify eligibility.
- Financial statements audited by a practicing Chartered Accountant shall only be accepted. In addition to the financial statements, Turnover/Networth Certificate duly certified by the practicing Chartered Accountant in the prescribed format (Appendix E & F) to be furnished. Status of registration of the Chartered Accountant will be ensured by verifying with official website of the Institute of Chartered Accountants of India [www.icaai.org](http://www.icaai.org). Since Unique Documents Identification Number (UDIN) is mandatory for issuing certificate by practicing

Chartered Accountants, the UDIN will be clearly specified in this above certificate. The authenticity of the documents will be verified in the website [www.udin.icaai.org](http://www.udin.icaai.org).

- An undertaking in the prescribed format given in Appendix-E shall be submitted by the bidder along with the bid.
- Stringent action including blacklisting of the firm from participating tenders of KSEBL will be taken against bidder for furnishing forged documents.
- Financial statements of the bidder in the case of Limited Companies will be verified with the published financial statements available in their website.
- Bidder should be an authorized partner/seller of all the proposed solutions/products and should provide Manufacturer Authorization in the template provided in the RFP.

## II. Revised Technical specifications

### 2.14 Item No. 19 & 50 of BoQ

#### 400TB SAN Storage for DC and 200TB SAN Storage for DR with SR Optics

SL no	Features	Specifications	Complied (Yes/No)
1	Storage Quality Certification	1. OEM should have deployed at least 3 Enterprise class storage solutions in Government / Banking / PSU / Corporate Sector during the last three years in India. A copy of project completion report / Work order needs to be submitted in the technical bid.	
		2. Proposed Enterprise class storage should be latest model of the family/series, and also the OEM should have a good product / support roadmap for the offered product.	
		3. Product brochures or any other product related literature should be able to clearly support the technical specifications and requirements of this RFP and this has to be submitted.	
		4. OEM should provide a declaration letter along with a copy of their official sizing tool output confirming the proposed solution will deliver the required performance parameters.	
2	Storage Controller	1. The Storage system offered must be scale-out system with SAN (block) workloads. The storage should have symmetric/asymmetric active-active architecture across controllers	
		2. Storage system must be offered in a No-Single-Point of Failure offering up to six 9s of availability guarantee with minimum 2 Nodes/Controllers and Scale-Out to minimum 4 Nodes.	
3	Cache/Memory Support	The system should have a minimum of 1.0 TB cache and scalable to 3 TB across controllers with an ability to protect data on cache if there is a controller failure or power outage.	

4	Drive Support	The system must support NVMe SSD drives, it should support end to end NVMe interface protocol capability. The system must support a minimum of 240 NVMe disks across controllers for scalability purpose.	
5	Disk Drive Protection	The proposed system should offer minimum dual drive failure protection for better resiliency and performance.	
6	Capacity for DC SAN	The system should be configured with 400TB usable capacity using NVMe TLC SSD Drives with RAID 6/Dual drive failure protection	
7	Capacity for DR SAN	The system should be configured with 200TB usable capacity using NVMe TLC SSD Drives with RAID 6/Dual drive failure protection	
8	Performance for DC SAN	Minimum 5.5 Lakh IOPS with <1ms latency for 50:50 R/W ratio, 8KB block size, 100% random workload, without considering the effect of cache for reads and writes. OEM signed letter with sizing justification to be provided by bidder	
9	Performance for DR SAN	Minimum 4 Lakh IOPS with <1ms latency for 50:50 R/W ratio, 8KB block size, 100% random workload, without considering the effect of cache for reads and writes. OEM signed letter with sizing justification to be provided by bidder	
10	Protocols	The storage should be configured natively with FC, NVMe-oF, NVMe/TCP, iSCSI protocols for use with different applications.	
11	Front-End and Backend connectivity	The proposed storage system should have minimum 8 x 32GbE FC + 8X 25/10G SFP+ front end ports available across dual controllers.	
12	Investment Protection	1. The storage offered should be a true scale-out system that allows intermixing of controllers across generations within the same system and scalable to a minimum of 4 controllers for maximum investment protection.	
13	Storage General Features	1. Ability to expand LUNS/Volumes on the storage online and instantly.	
		2. Quality of Service feature configured for both min and max limit at individual volume/LUN. The QoS should offer capability to maintain IOPs per GB allowing to increase the IOPs as LUN/Volume size is increased. Any additional license should be configured for the same if required.	
		3. Redundant hot swappable components like controllers, disks, power supplies, fans etc and allow re-usage of Disk Shelves with higher models of the same product line.	
		4. The proposed system should offer centralized, application-consistent data protection supported for various applications.	

		5. The proposed storage should enable and integrate with leading server virtualization technologies in the market including open source virtualisation technologies. The proposed array should be able to present both virtual storage pool and traditional LUN's.	
		6. The storage system should be capable of providing multi-pathing software with failover and load balancing functionality .	
		7. The proposed storage should provide both in-line and post process efficiency features such as Compression, De-Duplication.	
		8. The Storage array should be offered with Synchronous, Asynchronous replication feature & 3DC Zero Data Loss protection between the DC, DR and Near DR	
		9. The proposed system shall have Container Storage Interface (CSI) driver support	
14	Data Protection	a. The proposed system/solution should offer incremental replication capabilities. The WAN replication should be secured by end-to-end encryption and bandwidth optimization supported natively. All the necessary licenses should be provided from day 1.	
		b. The proposed system should offer solution for zero RPO and near zero RTO for high data availability and fast data replication for business-critical applications in both virtual and physical environments such that the services should continue operating even when there is a complete site failure.	
		c. The system offered should provide the ability to recover databases, and complete volumes instantaneously from the snapshot copies.	
		d. The proposed storage should offer minimum 1000 point-in-time snapshots per volume/LUN in such a way that the snapshots should not consume extra space at the time of creation. The license for entire usable capacity to be included.	
		e. The Proposed Storage system should have native GUI to monitor & perform operations on data protection jobs	
15	Security and Encryption	The proposed storage array must support data-at-rest encryption in compliance with FIPS 140-2 certification managed by On-board Key Manager or External Key Manager using a cryptographic security module.	
		Storage shall provide the capability to sanitize disk to ensure that data can be made un-readable while replacing the Disk Drives in the array.	
		The storage system should support the functionality to enable administrators in limiting or restricting users' administrative access granted for their defined role.	

		Proposed storage should support block level data de-duplication, compression for all kinds of data (structured & unstructured) and Thin provisioning .	
16	Data Reduction Technology / Storage Efficiency	The Storage Management Software should offer operational simplicity and rich data management functionalities for SAN Storage. It should provide a single dashboard to monitor health, availability, capacity usage, performance, and data protection status of various platforms along with resource planning.	
17	Management	The management tool should latest software upgrades, timely system analysis and recommendations to solve any performance issues.	
		The management tool should display system alerts and notifications for proactive management on the dashboard for users to quickly access them and it should provide information about support cases raised on the cluster.	
		The Storage management interface (GUI) should be virtualisation aware and provide end-to-end virtual-to-physical mapping of the physical infrastructure using a single console.	
		The offered system should be able to deliver actionable predictive analytics and proactive support through a cloud-based portal and mobile app. It should support automating maintenance task along with upgrades automation and watchlist. It should automate the task of updating the firmware via ansible playbooks.	
		It should support config drift to identify deviations in configurations and configuration drift corrections to help proactively address configuration gaps and anomalies. It should support capacity forecasting with drift chat integration to enable timely support.	
		The offered system should offer capability to find and fix security vulnerabilities and automate risk remediation.	
		The offered system should support single plane of automation that contain automation capabilities with full REST APIs. It should support REST APIs for events, systems and retrieving performance and license details.	
		The storage should enable a lower cost of ownership and ease of setup by reducing the time to deploy and manage the storage.	
18	Automation	The offered storage system support APIs to manage and monitor storage infrastructure. It should support various API categories such as Intelligent provisioning, Data centre management and monitoring, Configuration and admin, Data centre-level Aggregation etc.	

		The offered system should support automation to achieve the key storage outcomes such as cluster setup, Cluster upgrade, Provisioning, Protection and Monitoring and provide easy provisioning for volume and LUN.	
19	Rack Mountable	The storage should be supplied with rack mount kit. All the necessary patch cords (Ethernet and Fiber) shall be provided and installed by the vendor.	
20	Warranty	The Hardware and software quoted should have 5 years onsite comprehensive warranty/support along with upgrades and updates.	

## 2.18 Item No. 23 & 57 of BoQ

### Backup Device - NL SAS Unit with 100TB storage at DC and Remote location

S No	Specification	Complied Yes/No
1	Make- To be provided by Bidder	
2	Model Name- To be provided by Bidder	
3	The offered backup device should be fully compatible with the proposed backup software. The technical compatibility matrix establishing this to be attached with technical bid	
4	Offered Disk based backup solution shall be certified to work with leading Backup Applications of vendors including Veritas, Data Protector, Veeam, Commvault, Zerto etc. Device certification/Compatibility matrix with the above software should be attached as part of the technical compliance.	
5	Offered device shall be delivered with a minimum capacity of 100TB of usable capacity after RAID6 using NLSAS drives. In case bidder's solution requires higher capacity then solution has to be sized accordingly and provided to cater to the following backup capacity and retention needs. Storage must be supplied with 100TB usable capacity on dual ported 12Gbps NL-SAS Disk (10TB or higher) with appropriate RAID Group. Daily incremental backup to be retained for 14 days Weekly full backups to be retained for 12 weeks on disk. Weekly and Monthly full backup will also need to be copied to tape for vaulting	
6	Offered device should flexibly provide the following backup target types - VTL or NAS (NFS/SMB)	
9	Offered device shall have integrated de-duplication license & replication license so that only unique data or deduplicated data are transferred to remote / DR location.	
10	Offered device should be supported in source based/target based de-duplication and shall be integrated with the offered backup software.	

11	Offered device shall have Minimum of 2 x 25Gbps SFP IP ports (fibre) & 2 x 16/32Gbps FC ports. Licenses and required SFPs for all ports shall be offered and configured.	
12	The Device should support ISV controlled Data immutability to ensure data retention defined as part of the retention policy to prevent unauthorized deletion of backup sets or objects prior to their expiry date.	
13	Offered disk based backup device should have encryption functionality.	
14	Offered disk based backup device shall also support Secure erase feature for protecting against unauthorized recovery of deleted data.	
15	Offered Device should support enhanced security with dual/multifactor authorization/authentication or dual sign-on requiring the administrator and a second authorized authority such as a security officer to authorize performance of critical functions to protect against malicious attackers.	
16	Offered device shall support rated backup write performance of at-least 25TB/Hr of backup throughput.	
17	Warranty - 5 years 24x7 support	





**KERALA STATE ELECTRICITY BOARD Ltd**

(Incorporated under the Companies Act, 1956)  
Office of the Chief Engineer (IT,CR and CAPs)

Registered Office: Vidyuthi Bhavanam, Pattom,

Thiruvananthapuram – 695 004

CIN: U40100KL2011SGC027424

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**Corrigendum No. 7 dated 17.12.2024 in the e-Tender No. 2024 KSEB 692967 1 (RFP ID No. CEIT/ITCSD/10/2024-25 dated 27.09.2024 – RFP for Revamping of IT Infrastructure components in the Data Centre and Disaster Recovery Centre of KSEBL under RDSS scheme.**

This document supersedes any other document in this regard.

1. Revised Item No. 12 of Clause 6.1 Pre-Qualification criteria for bidders.
2. Revised technical specifications for SAN storage system

S/d-

**Chief Engineer (IT, CR & CAPs)  
Vidyuthi Bhavanam,  
Pattom, Thiruvananthapuram**

## **1. Revised Item No.12 of Clause 6.1 Pre-Qualification criteria for bidders.**

<b>Clause No.</b>	<b>Qualification Criteria</b>	<b>Supporting Documents Required</b>
12	The OEMs of Server, Storage, Network and Backup products should have ISO 9001, ISO 14001, ISO 27001 and CMMI level3 or above certifications. If the OEM does not have CMMI level 3 certification, their software partner shall possess the same.	Copy of valid Certification documents

## **2. Revised Technical specifications**

### **2.14 Item No. 19 & 50 of BoQ**

#### **400TB SAN Storage for DC and 200TB SAN Storage for DR with SR Optics**

<b>SL no</b>	<b>Features</b>	<b>Specifications</b>	<b>Complied (Yes/No)</b>
1	Storage Quality Certification	1. OEM should have deployed at least 3 Enterprise class storage solutions in Government / Banking / PSU / Corporate Sector during the last three years in India. A copy of project completion report / Work order needs to be submitted in the technical bid.	
		2. Proposed Enterprise class storage should be latest model of the family/series, and also the OEM should have a good product / support roadmap for the offered product.	
		3. Product brochures or any other product related literature should be able to clearly support the technical specifications and requirements of this RFP and this has to be submitted.	
		4. OEM should provide a declaration letter along with a copy of their official sizing tool output confirming the proposed solution will deliver the required performance parameters.	
2	Storage Controller	1. The Storage system offered must be scale-out system with SAN (block) workloads. The storage should have symmetric/asymmetric active-active architecture across controllers	

		2. Storage system must be offered in a No-Single-Point of Failure offering up to six 9s of availability guarantee with minimum 2 Nodes/Controllers and Scale-Out to minimum 4 Nodes.	
3	Cache/Memory Support	The system should have a minimum of 1.0 TB cache and scalable to 2 TB or more across controllers with an ability to protect data on cache if there is a controller failure or power outage.	
4	Drive Support	The system must support NVMe SSD drives, it should support end to end NVMe interface protocol capability. The system must support a minimum of 240 NVMe disks across controllers for scalability purpose.	
5	Disk Drive Protection	The proposed system should offer minimum dual drive failure protection for better resiliency and performance.	
6	Capacity for DC SAN	The system should be configured with 400TB usable capacity using NVMe TLC SSD Drives with RAID 6/Dual drive failure protection	
7	Capacity for DR SAN	The system should be configured with 200TB usable capacity using NVMe TLC SSD Drives with RAID 6/Dual drive failure protection	
8	Performance for DC SAN	Minimum 5.5 Lakh IOPS with <1ms latency for 50:50 R/W ratio, 8KB block size, 100% random workload, without considering the effect of cache for reads and writes	
9	Performance for DR SAN	Minimum 4 Lakh IOPS with <1ms latency for 50:50 R/W ratio, 8KB block size, 100% random workload, without considering the effect of cache for reads and writes	
10	Protocols	The storage should be configured natively with FC, NVMe-oF, NVMe/TCP, iSCSI protocols for use with different applications.	
11	Front-End and Backend connectivity	The proposed storage system should have minimum 8 x 32GbE FC + 8X 25/10G SFP+ front end ports available across dual controllers.	
12	Investment Protection	The storage offered should be a true scale-out system and scalable to a minimum of 4 controllers for maximum investment protection.	
13	Storage General Features	1. Ability to expand LUNS/Volumes on the storage online and instantly.	
		2. Quality of Service feature configured for both min and max limit at individual volume/LUN. The QoS should offer capability to maintain IOPs per GB allowing to increase the IOPs as LUN/Volume size is increased. Any additional license should be configured for the same if required.	

		3. Redundant hot swappable components like controllers, disks, power supplies, fans etc and allow re-usage of Disk Shelves with higher models of the same product line.	
		4. The proposed system should offer centralized, application-consistent data protection supported for various applications.	
		5. The proposed storage should enable and integrate with leading server virtualization technologies in the market including open source virtualisation technologies. The proposed array should be able to present both virtual storage pool and traditional LUN's.	
		6. The storage system should be capable of providing multi-pathing software with failover and load balancing functionality	
		7. The proposed storage should provide both in-line and post process efficiency features such as Compression, De-Duplication.	
		8. The proposed storage should be able to provide secure multi tenancy for air gap security and isolation from other workloads	
		9. The proposed storage should provide capability to do what/if analysis on cost savings on the filesystems based on the cost assigned to the tier	
		10. The Storage array should be offered with Synchronous, Asynchronous replication feature & 3DC Zero Data Loss protection between the DC, DR and Near DR	
		11. The proposed system shall have Container Storage Interface (CSI) driver support	
14	Data Protection	a. The proposed system/solution should offer incremental replication capabilities. The WAN replication should be secured by end-to-end encryption and bandwidth optimization supported. All the necessary licenses should be provided from day 1.	
		b. The proposed system should offer solution for zero RPO and near zero RTO for high data availability and fast data replication for business-critical applications in both virtual and physical environments such that the services should continue operating even when there is a complete site failure.	
		c. The system offered should provide the ability to recover databases, and complete volumes instantaneously from the snapshot copies.	

		d. The proposed storage should offer minimum 500 point-in-time snapshots per volume/LUN in such a way that the snapshots should not consume extra space at the time of creation. The license for entire usable capacity to be included.	
		e. The Proposed Storage system should have native GUI to monitor & perform operations on data protection jobs	
15	Security and Encryption	The proposed storage array must support data-at-rest encryption in compliance with FIPS 140-2 certification managed by On-board Key Manager or External Key Manager using a cryptographic security module.	
		Storage shall provide the capability to sanitize disk to ensure that data can be made un-readable while replacing the Disk Drives in the array.	
		The storage system should support the functionality to enable administrators in limiting or restricting users' administrative access granted for their defined role.	
		Proposed storage should support block level data de-duplication, compression for all kinds of data (structured & unstructured) and Thin provisioning .	
16	Data Reduction Technology / Storage Efficiency	The Storage Management Software should offer operational simplicity and rich data management functionalities for SAN Storage. It should provide a single dashboard to monitor health, availability, capacity usage, performance, and data protection status of various platforms along with resource planning.	
17	Management	The management tool should latest software upgrades, timely system analysis and recommendations to solve any performance issues.	
		The management tool should display system alerts and notifications for proactive management on the dashboard for users to quickly access them and it should provide information about support cases raised on the cluster.	
		The Storage management interface (GUI) should be virtualisation aware and provide end to-end virtual-to-physical mapping of the physical infrastructure using a single console.	

		The offered system should be able to deliver actionable predictive analytics and proactive support through a cloud-based portal. It should support automating maintenance task along with upgrades automation and watchlist. It should automate the task of updating the firmware via ansible playbooks.	
		It should support config drift to identify deviations in configurations and configuration drift corrections to help proactively address configuration gaps and anomalies. It should support capacity forecasting with drift chat integration to enable timely support.	
		The offered system should offer capability to find and fix security vulnerabilities and automate risk remediation.	
		The offered system should support single plane of automation that contain automation capabilities with full REST APIs. It should support REST APIs for events, systems and retrieving performance and license details.	
		The storage should enable a lower cost of ownership and ease of setup by reducing the time to deploy and manage the storage.	
18	Automation	The offered storage system support APIs to manage and monitor storage infrastructure. It should support various API categories such as Intelligent provisioning, Data centre management and monitoring, Configuration and admin, Data centre-level Aggregation etc.	
		The offered system should support automation to achieve the key storage outcomes such as cluster setup, Cluster upgrade or equivalent functionality, Provisioning, Protection and Monitoring and provide easy provisioning for volume and LUN.	
19	Rack Mountable	The storage should be supplied with rack mount kit. All the necessary patch cords (Ethernet and Fiber) shall be provided and installed by the vendor.	
20	Warranty	The Hardware and software quoted should have 5 years onsite comprehensive warranty/support along with upgrades and updates.	